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**National Highway
Traffic Safety
Administration**

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Test Report

August 1985

Side Impact Protection in Production Vehicles

MDB-to-Car Side Impact Test of a 26° Crabbed Moving Deformable Barrier to a 1983 Mazda 626 at 33.4 mph

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16. Abstract

This test report documents one of a series of ten crash tests to evaluate side impact protection in various vehicle models. Testing was conducted on a 1983 Mazda 626 4-door Sedan at the TRCO Crash Test Facility, East Liberty, Ohio. The test vehicle was impacted on the left side by a moving deformable barrier, crabbed to 26°, at 33.4 mph. The test was a simulation of a 90° intersection collision with the striking vehicle travelling at 30 mph and the struck vehicle travelling at 15 mph. Occupant responses of two side impact dummies were measured. One dummy was located in the driver's designated seating position and one was located in the left rear seating position. The test date was July 10, 1985 and the ambient temperature was 80°F.

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SECTION 1.0
PURPOSE AND INTRODUCTION

PURPOSE

The main purpose of this test was to evaluate side impact protection in one of a fleet of 2-door and 4-door vehicles. The vehicle was tested using conditions not currently contained in a Federal Motor Vehicle Safety Standard.

INTRODUCTION

A stationary 1983 Mazda 626 4-door sedan was impacted on the left side by a Moving Deformable Barrier (MDB) on July 10, 1985. The test was to simulate an intersection collision with the striking vehicle travelling at 30 mph and the struck vehicle travelling at 15 mph. The orientation angle of the striking vehicle was 90° counterclockwise with respect to the longitudinal axis of the struck vehicle. The leading edge of contact was to be 37 inches forward of the vehicle center of gravity which is defined by accident investigation to be the midpoint of the wheelbase.

To simulate this collision, the MDB was to be towed into the stationary Mazda 626 at 33.5 mph with the MDB's wheels crabbed clockwise to 26°. The actual test speed was 33.4 mph and the actual leading edge of contact was 35.5 inches forward of the midpoint of the Mazda 626 wheelbase.

The vehicle was a baseline model with no structural modification. The driver door and left rear door were unpadded.

Section 2 contains General Test and Vehicle Parameter Data. Section 3 contains data required by R & D. Appendix A contains pre-test and post-test vehicle and dummy photographs. Appendix B contains Data Plots. Appendix C contains Dummy Certification Data.

SECTION 2.0
GENERAL TEST AND VEHICLE PARAMETER DATA

The following data sheets describe the General Test and Vehicle Parameter Data.

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Toyo Kogyo Company Ltd.

MAKE/MODEL: Mazda 626 VIN: JM1GC2213D1506896

BODY STYLE: 4-Door Sedan MODEL YEAR: 1983

NHTSA NO.: R & D COLOR: Maroon

ENGINE DATA: TYPE: Transverse CYLINDERS: 4 DISPLACEMENT 2000 cc

TRANSMISSION DATA: 5 Speed Manual

DATE VEHICLE RECEIVED: 5/9/85 ODOMETER READING: 306

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

POWER STEERING	No	AUTOMATIC TRANSMISSION	No
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	No
POWER SEATS	No	TILTING STEERING WHEEL	Yes
POWER WINDOWS	No	TELESCOPING STEERING WHEEL	No
TINTED GLASS	No	AIR CONDITIONING	No
RADIO	No	ANTI-SKID BRAKE	No
CLOCK	Yes	REAR WINDOW DEFROSTER	Yes
OTHER			

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? Yes
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? Yes*
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? No
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

DATA FROM CERTIFICATION LABEL ON LEFT DOOR FACE OR "B" POST:

VEHICLE MANUFACTURED BY: Toyo Kogyo Company Ltd.

DATE OF MANUFACTURE: 11/82

GVWR: 3535 LBS.,

GAWR: FRONT 1960 LBS., REAR 1610 LBS.

*Driver's side windshield cracked.

VEHICLE TIRE DATA

RECOMMENDED COLD TIRE PRESSURE: FRONT 28 psi; REAR 26 psi

TIRES ON VEHICLE (MFGR. & LINE, SIZE): BF Goodrich 165 SR 14

BIAS PLY, BELTED, OR RADIAL: Steel Belted Radial

PLY RATING: 3

IS SPARE TIRE "SPACE SAVER"? Yes

IS SPARE TIRE STANDARD EQUIPMENT? Yes

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH MAXIMUM FLUIDS):

RIGHT FRONT	717	LBS.	RIGHT REAR	487	LBS.
LEFT FRONT	716	LBS.	LEFT REAR	475	LBS.
TOTAL FRONT WEIGHT	1433	LBS. (59.8 % OF TOTAL VEHICLE WEIGHT)			
TOTAL REAR WEIGHT	962	LBS. (40.2 % OF TOTAL VEHICLE WEIGHT)			
TOTAL DELIVERED WEIGHT	2395	LBS.			

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE:	RF 26.1	;LF 26.1	;RR 25.6	;LR 25.6
PRE-TEST ATTITUDE:	RF 25.3	;LF 25.3	;RR 23.8	;LR 23.8
POST-TEST ATTITUDE:	RF 23.9	;LF 24.4	;RR 22.3	;LR 22.6

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 84 LBS. CARGO:

RIGHT FRONT	748	LBS.	RIGHT REAR	639	LBS.
LEFT FRONT	790	LBS.	LEFT REAR	650	LBS.
TOTAL FRONT WEIGHT	1538	LBS. (54.4 % OF TOTAL VEHICLE WEIGHT)			
TOTAL REAR WEIGHT	1289	LBS. (45.6 % OF TOTAL VEHICLE WEIGHT)			
TOTAL TEST WEIGHT	2827	LBS.			

WEIGHT OF BALLAST SECURED IN VEHICLE TRUNK AREA: 0 LBS.

TEST FLUID DATA

TEST FLUID TYPE: PURPLE STODDARD SOLVENT 2; SPEC. GRAVITY: 0.764

KINEMATIC VISCOSITY: 0.99 CENTISTOKES

"USEABLE" CAPACITY*: NA GALLONS ACTUAL

TEST VOLUME: 1.0 GALLONS

FUEL SYSTEM CAPACITY (DATA FROM OWNERS MANUAL): 16 GALLONS

DETAILS OF FUEL SYSTEM: DNA

ELECTRIC FUEL PUMP: Yes FUEL INJECTION: No

DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? Yes

DATA FROM "RECOMMENDED TIRE PRESSURE" LABEL ON DOOR, POST, GLOVEBOX, ETC.

VEHICLE LOAD (UP TO CAPACITY): FRONT 28 psi; REAR 26 psi

RECOMMENDED TIRE SIZE: 165 SR 14 LOAD RANGE X B, C,

VEHICLE CAPACITY: TYPES OF SEATS: Front - Bucket
Rear - Bench

NUMBER OF OCCUPANTS (DESIGNATED SEATING CAPACITY): 2 FRONT
3 REAR
5 TOTAL

CARGO LOAD 100 LBS.

TOTAL 850 LBS.

*WITH ENTIRE FUEL SYSTEM FILLED WITH FUEL TANK THROUGH CARBURETOR BOWL.

TEST CONDITIONS

TEST NUMBER: 850710

DATE OF TEST: July 10, 1985 TIME OF TEST: 13:23

WIND VELOCITY: Calm HUMIDITY: NA

AMBIENT TEMPERATURE AT IMPACT AREA: 80° F

TEMPERATURE IN OCCUPANT COMPARTMENT: 78° F

SUBJECT VEHICLE DATA

	ACTUAL	INTENDED
VEHICLE TEST WEIGHT (LBS.)	2827	2843
MDB TEST WEIGHT (LBS.)	2984	3000
MDB VELOCITY (MPH)*	33.4	33.5
IMPACT POINT (INCHES)**	35.5	37

DUMMIES

	DRIVER	MIDDLE PASSENGER	RT. FRONT PASSENGER	LEFT REAR PASSENGER	RT. REAR PASSENGER
TYPE:	SID			SID	
SERIAL NO.:	123			U02	
INSTRUMENTATION:					
HEAD ACCEL.:	Yes			Yes	
CHEST ACCEL.:	Yes (Upper/Lower)			Yes (Upper/Lower)	
FEMUR L.C.'S:	No			No	
OTHER:	Pelvis/Ribs			Pelvis/Ribs	

RESTRAINT SYSTEM: Both dummies were unrestrained

* As measured over final one foot of travel.

** As measured forward of the midpoint of the test vehicle's wheelbase.

VISIBLE DUMMY CONTACT POINTS:

	DRIVER 123	PASSENGER U02
Head	Top of MDB Face, Window Sill, Roof	Left C-Pillar
Chest	Driver's Door Panel	Left Rear Door Panel
Abdomen	Driver's Door Panel	Left Rear Door Panel
Left Knee	Driver's Door Panel	Left Rear Door Panel
Right Knee	Left Knee	Left Knee

DOOR OPENING:

	LEFT	RIGHT
Front	NA*	Easy
Rear	NA*	Easy

SEAT MOVEMENT:

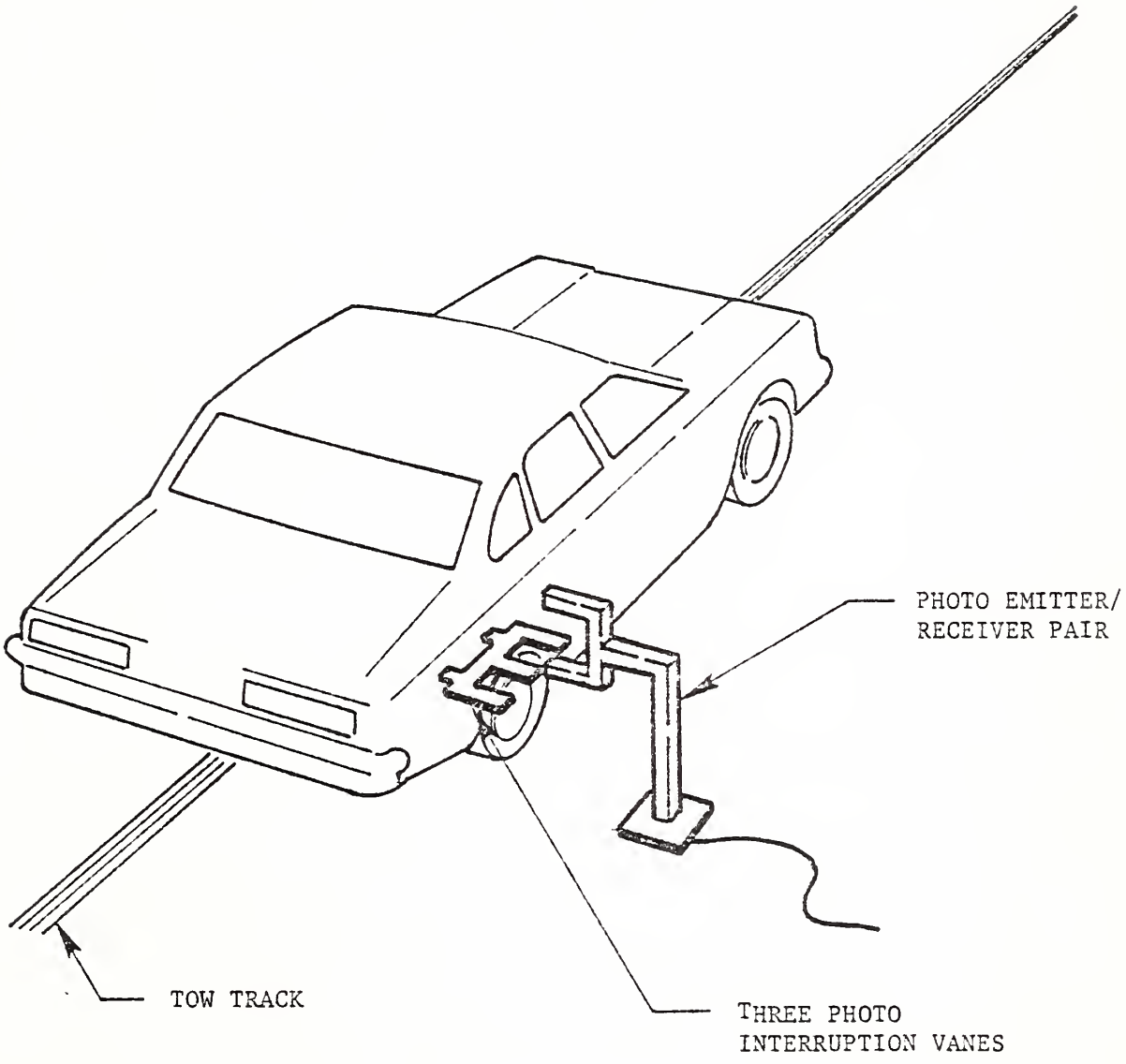
	SEAT BACK FAILURE	SEAT SHIFT
Front	Yes, Driver	Yes, Driver - 6 Inches
Rear	No	No

GLAZING DAMAGE: Left side of windshield cracked; all left side windows shattered; no backlight damage.

OTHER NOTABLE IMPACT EFFECTS: Both left side door latches separated, both left side door hinges remained intact.

*CTM to open left side doors at a later date.

IMPACT VELOCITY MEASUREMENT SYSTEM



The final vane clears emitter/receiver two inches before impact.

The vanes have one foot spacing.

VEHICLE TEST WEIGHT CALCULATION

Test Weight = Unloaded Delivered Weight +
(Number of Dummies X 174 lbs.) +
Cargo Weight
= 2395 + (2 X 174) + 100 lbs.
= 2843 lbs.

To achieve test weight, 1.0 gallon of Stoddard Solvent was added in the fuel tank. The weight of the test vehicle was measured by placing each wheel on a KJ Law Force Plate.

TEST ANOMALIES

1. Anomalous spikes occurred in the following data channels:

   a. HEDXG1 - Driver Head Acceleration X-axis from 66 to 91 msec. No peak resultant or HIC is reported. No resultant plot is included.
   b. TO1YG1 - Driver Upper Spine Acceleration Y-axis from 315 to 337 msec.
   c. T12YG1 - Driver Lower Spine Acceleration Y-axis (Primary) from 73 to 88 msec, from 119 to 134 msec, from 179 to 201 msec and from 293 to 340 msec. No negative peak level is reported.
   d. LURYG1 - Driver Left Upper Rib Acceleration Y-axis from 270 to 300 msec.

      The exact cause of these spikes is unknown but may be due to momentary pin separation.

2. Cable separation occurred in the following data channels:

   LFSYG - Vehicle Left Front Sill Acceleration Y-axis
   LFDYG1 - Vehicle Left Front Door (Position 6) Acceleration Y-axis
   LFDYG2 - Vehicle Left Front Door (Position 8) Acceleration Y-axis

No peak levels or delta velocities are reported. No delta velocity plots are included.

3. Data channel T12ZG1 - Driver Lower Spine Acceleration Z-axis failed at approximatly 20 msec. No peak levels or lower spine resultant accelerations are reported. No resultant acceleration plots are included.

4. A data shift occurred in data channel RRSXG - Vehicle Right Rear Sill Acceleration X-axis after approximately 160 msec. This problem has been traced to the signal conditioning card and has been repaired.

SECTION 3.0
DATA REQUIRED BY R&D

The following pages are included in this section:

1. Dummy temperature control and positioning data
2. Dummy kinematic summary
3. Vehicle crush data
4. Dummy and vehicle accelerometer location and data summary
5. High speed camera information
6. Transducer information

DUMMY TEMPERATURE CONTROL AND POSITIONING

The vehicle was kept inside the temperature controlled crash test building until approximately 2 hours prior to the test. Temperature inside the vehicle and ambient temperature at the crash area were recorded. Dummy temperature while outside the crash test building was maintained portably until approximately 1 minute prior to the test.

The following Side Impact Dummy Seating Procedure summarize the steps taken to position the instrumented, calibrated dummies in the test vehicle.

SIDE IMPACT DUMMY SEATING PROCEDURE

1. Seat Positioning

A. Place seat at the longitudinal midpoint of fore to aft adjustment (forward most locking position to rear most locking position). If no locking position is available at mid-travel, use the position immediately rearward of mid-travel.

B. If the seat back angle is adjustable, place it in the manufacturer's stated nominal design location. If not specified, set it at the first detent rearward of 25°.

C. Adjustable head restraints are set such that the top surface of the restraint is level with the cg of the dummy's head.

D. If the seat is equipped with adjustable side or lumbar supports, they are set in their "released" or full back positions.

E. All other seat adjustments are positioned to their mid-travel locations. If locking positions are not available at these mid-points, use the position immediately rearward, down, left or clockwise of mid-travel. Clockwise is defined looking rear to front or left to right relative to the vehicle. This also applies to adjustable steering columns.

2. H-point Determination

A. The SAE three-dimensional H-point machine (SAE J826 APR80 - 50th percentile male configuration) is used to locate the H-point for each surrogate.

B. The H-point machine is positioned on the seat as follows:

1. Bucket or Contoured Seats - The H-point machine is centered on the bucket or contour such that its midsagittal plane is vertical and longitudinal.

2. Bench Seats

a. driver position - The H-point machine is positioned such that its midsagittal plane is vertical, longitudinal, and contains the steering wheel center point.

b. outboard passenger positions - The H-point machine is positioned such that its midsagittal plane is vertical, longitudinal, and the same distance from the longitudinal vehicle centerline as that for the driver position.

c. Center passenger positions - The H-point machine is positioned such that its midsagittal plane is vertical and contains the longitudinal vehicle centerline.

C. Locate the H-point position using the steps outlined in sections 4 through 6 of SAE Standard J826 APR80, unless otherwise specified in section 1 or 2 of this document. Record the coordinates of this point, relative to the vehicle, for use in section 4 of this document.

3. Test Dummies

A. All NHTSA side impact crash tests use the NHTSA Side Impact Dummy (SID) as the surrogate(s), unless otherwise specified by the CTM.

B. All dummy joints are inspected for mobility prior to each test usage and reset to hold between 1 and 2 g's. This amount just barely restrains the weight of the individual limb when it is extended horizontally.

C. Each test dummy is clothed in form-fitting cotton stretch underwear with short sleeves and mid-calf length pants. Each foot of the dummy is equipped with a size 11EE shoe which meets the configuration, size, sole, and heel thickness specifications of MIL-S-13192 and weighs 1.25 $\pm$ 0.2 pounds. All the above items are supplied by the contractor.

4. Initial Dummy Placement

The SID dummy(s) is placed in the vehicle seat with its pelvis

positioned such that a lateral line passing through the dummy H-point is perpendicular to the longitudinal centerplane of the vehicle.

A. Bucket or Contoured Seats. The dummy is centered on the bucket or contoured seat such that its madsagittal plane is vertical and longitudinal. The legs are positioned as follows, keeping the femur and tibia centerlines in a plane that is as near to vertical as possible.

1. driver position placement - The right foot of the dummy is placed on the undepressed accelerator pedal, with the heel resting on the floorpan as far forward as possible. The left knee is positioned such that the distance from the outer surface of the knee pivot bolt to the dummy's midsagittal plane is 6 inches.

2. passenger position placement - The knees of the dummy are initially set 11 1/2" apart, measured betweeen the outer surfaces of the knee pivot bolt heads. If a center tunnel prevents this, place the feet on either side of the tunnel.

B. Bench seats.

1. driver position placement - The dummy is placed in the seat as outlined in section 4.A.1 except that its midsagittal plane is vertical, longitudinal and contains the steering wheel center point.

2. outboard passenger positions - The dummy is placed in the seat as outlined in section 4.A.2 except that its midsagittal plane is vertical, longitudinal, and the same distance from the vehicle centerline as that for the driver position.

3. center passenger positions - The dummy is positioned in the seat as outlined in section 4.A.2 except that its midsagittal plane is vertical and contains the vehicle centerline.

5. Initial Dummy Positioning

A. H-Point Positioning

1. With the dummy laterally positioned as in section 4, insert the pelvis angle indicator bar in the hole provided above, and to the rear of the dummy H-point. Position the longitudinal pelvis angle between 23° and 25° to the horizontal. This may be accomplished by raising the legs or flexing the upper torso forward and allowing the

pelvis to rotate. The lateral pelvis angle is to be horizontal.

2. Apply sufficient force on the lower torso in a horizontal and vertical direction to place the dummy H-point at the coordinates obtained in section 2.

3. If the H-point cannot be placed at the desired coordinates, adjust the pelvis angle within the 2° band and reposition to the coordinates. After repositioning the H-point, any deviation from the desired coordinates is recorded and used to indicate actual H-point locations. This deviation is not to exceed 1/2".

B. Upper Torso Positioning. The dummy's upper torso should rest against the seat back. If not, adjust the upper torso, maintaining the H-point location and pelvis angle, so that the dummy's back rests against the seat back. If this cannot be done, modify the H-point location and/or pevis angle within the allowable bands until the back rests against the seat.

6. Final Dummy Positioning

A. Driver Position. Without inducing pelvis or torso movement, the dummy's right foot is placed on the undepressed accelerator pedal with the heel resting as far forward as possible on the floorpan. The left foot is set perpendicular to the lower leg with the heel resting on the floorpan in the same lateral line as the right heel. If possible within these constraints, the dummy's thighs should be in contact with the seatpan.

B. Front Passenger Positions. Without inducing pelvis or torso movement, place the dummy's feet on the vehicle's toeboard with the heel resting on the floorpan as close as possible to the intersection of the toeboard and floorpan. If the feet cannot be placed on the toeboard, they are set perpendicular to the lower legs and placed as far forward as possible such that the heels rest on the floorpan.

C. Rear Passenger Positions. Without inducing pelvis or torso movement, the feet are placed flat on the floorpan and beneath the front

seat as far forward as possible without front seat interference. If necessary, change the distance between the knees as required to place the feet beneath the seat. Record the new distance.

D. Vehicles with wheelhouse projections in the passenger compartment. The foot (feet) in question is placed in the wheel of the floorpan/toeboard and not in the wheelhouse projection. This is done by twisting the foot at the ankle, maintaining the upper and lower leg positions outlined in section 4. If this does not resolve the situation, move the leg of the foot in question just enough to achieve the correct position, keeping the femur and tibia centerlines in a plane that is as near to vertical as possible. Record the new distance between the knees.

E. The knee positions are to be as outlined in section 4, unless modified as in section 6. The plane containing the femur and tibia centerlines for each leg is to be as near to vertical as possible without inducing pelvis or torso movement. Record the distance between the knees for each dummy.

F. Prior to conducting the test, the dummy position is visually checked. The dummy is to be properly positioned laterally with its midsagittal plane vertical and longitudinal, and the upper torso resting against the seat back. The H-point and pelvis angle are to be within the specified ranges and the foot, knee, and leg placements are to be as outlined. The CTM is to be satisfied with the final dummy position and any deviations from this procedure are to be approved by the CTM.

G. The final dummy position is recorded. These measurements are to include, but not be limited to, pelvis and head angles as well as actual H-point and head cg locations relative to the vehicle. The straight-line distance from the H-point to the center of the outer ankle bolt is also recorded for one of the legs (eg. left H-point to left ankle bolt).

DUMMY IN-VEHICLE POSITION RECORDING SHEET

VEHICLE NHTSA NO. R & D

MFR./MAKE/MODEL: Mazda 626

FRONT SEAT TYPE: ___ BENCH
X BUCKET
___ SPLIT BENCH

ADJUSTER TYPE: X MANUAL
___ POWER

BUCKET SEAT BACK TYPE: ___ FIXED
X ADJUSTABLE

TECHNICIANS:
1. B. Miller
2. D. Carpenter
3. ___

POSITIONING DATE: July 10, 1985

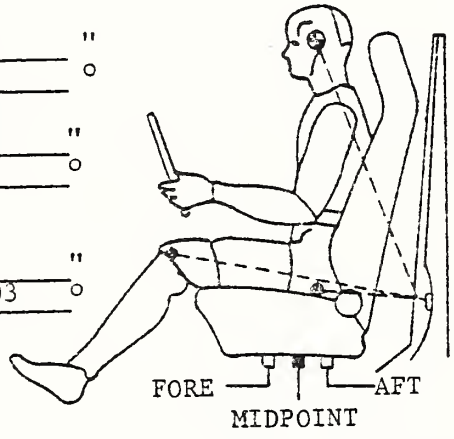
AMBIENT TEMP: 68 °F TIME: 9:07

DRIVER DUMMY # 123

HEAD 23.0 "
TARGET* 6 °

KNEE 23.8 "
JOINT 83 °

APPROX.
"H" 9.1 "
POINT 103 °

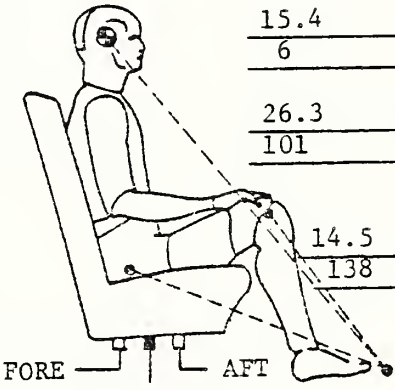


REAR PASSENGER DUMMY # U02

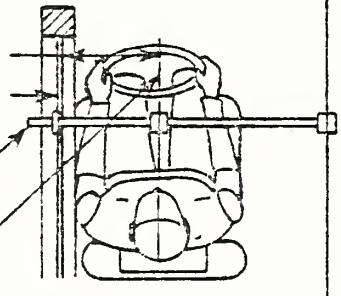
15.4 "HEAD
6 °TARGET**

26.3 "KNEE
101 °JOINT

APPROX.
14.5 " "H"
138 °POINT



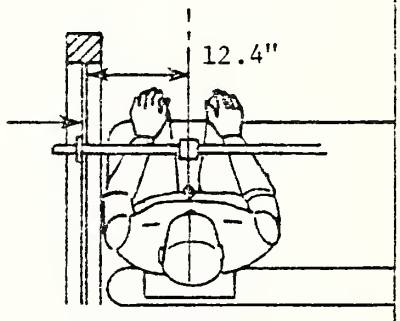
DOOR
GLASS
HEIGHT*** 13.6"
9.8"



DRIVER
DUMMY #

123

DOOR
GLASS
HEIGHT NA



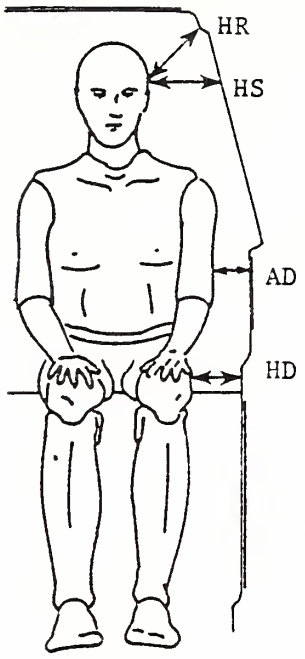
PASSENGER
DUMMY #

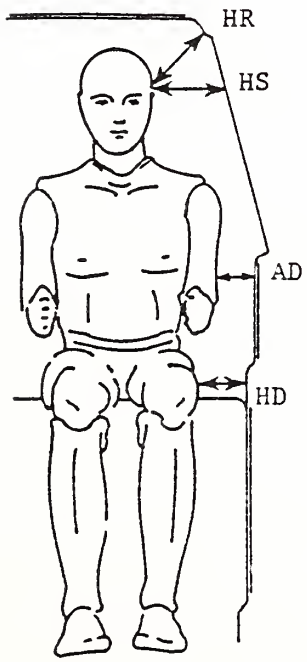
U02

*All driver dummy dimensions referenced to top of front door striker bolt and all angles referenced to vertical.

**All passenger dummy dimensions referenced to top of rear door striker bolt and all angles referenced to vertical.

***Door glass height is equal on the right and left side of vehicle at dummy nose level.

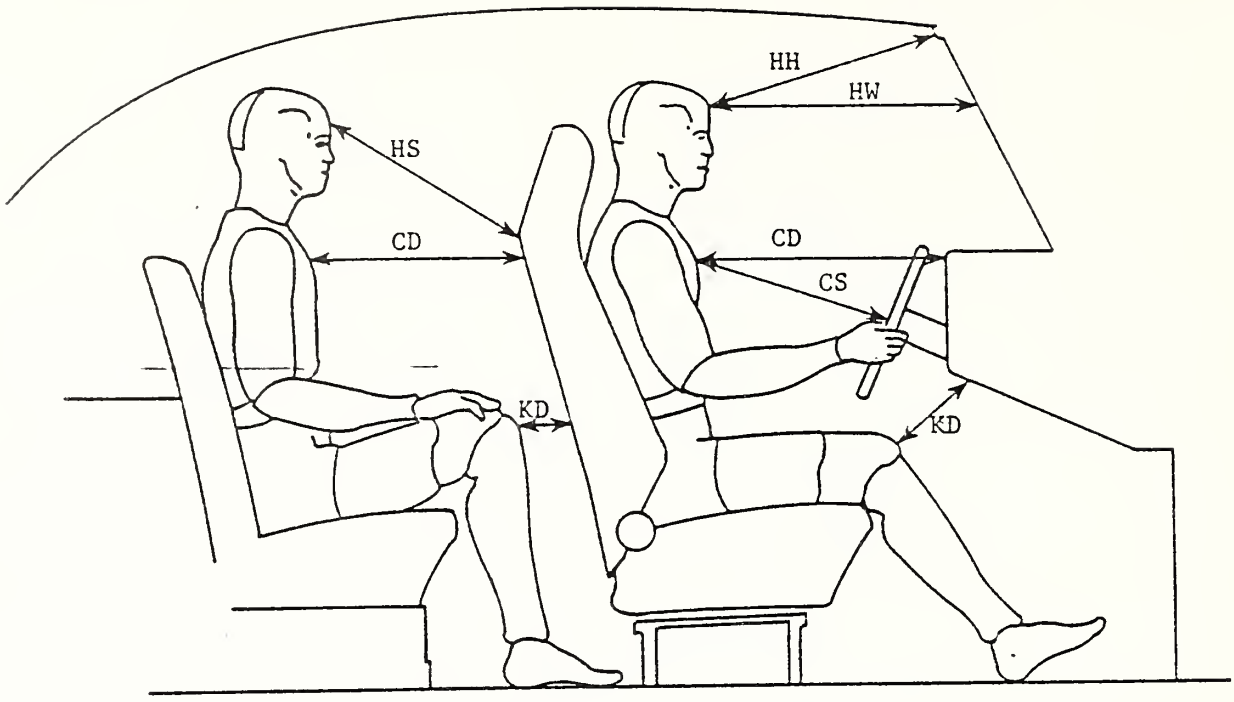




	DRIVER 123	PASSENGER U02
HR	7.6	7.6
HS	9.9	6.7
AD	5.2	4.8
HD	7.3	6.5

ALL MEASUREMENTS IN INCHES

DUMMY LATERAL CLEARANCE DIMENSIONS



	DRIVER 123	PASSENGER U02
HH	10.6	DNA
HW	17.4	DNA
HS	DNA	27.4
CD	20.3	20.8
CS	12.9	DNA
KDL	3.1	5.9
KDR	3.5	6.0

ALL MEASUREMENTS IN INCHES

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

SAE 3D H-POINT MACHINE LOCATION AND DUMMY LOCATION DATA

	DRIVER #123*	PASSENGER #U02**
SAE 3D H-POINT MACHINE LOCATION:	X = -9.91 Z = 7.13	R = 14.44 θ = -42°
DUMMY H-POINT LOCATION:	X = -9.44 Z = 6.81	R = 14.31 θ = -42°
DUMMY HEAD LOCATION:	X = -17.22 Z = 33.00	R = 15.38 θ = 84°
DUMMY HEAD ANGLE:	-1°	8°
DUMMY PELVIC ANGLE:	25°	23°
DUMMY H-POINT TO LEFT ANKLE BOLT DISTANCE:	27.3	26.5

*All location measurements referenced to left most front seat track bolt in two-dimensional rectangular coordinates: +X = forward, +Z = upward.

**All location measurements referenced to top of left rear door striker bolt in two-dimensional cylindrical coordinates: R = straight line distance parallel to vehicle longitudinal centerline (always positive), θ = pitch angle (positive is upward with respect to horizontal).

All dimensions in inches except as noted.

All angles referenced to horizontal, positive is upward.

DUMMY KINEMATIC SUMMARY

DRIVER

During impact, the dummy's torso contacted the driver's inner door panel and the head contacted the window sill and the top of the moving deformable barrier face. The dummy rebounded laterally across the front occupant compartment. The rear of the dummy's head struck the roof near the right front door and the buttocks struck the right front inner door panel. The buttocks slid down into the passenger's seat and the rear of the upper torso contacted the right front inner door panel. The dummy came to rest lying on its left side in the front passenger's seat facing the driver's side.

PASSENGER

During impact, the dummy's torso contacted the left rear door and the head contacted the left C-pillar. The dummy rebounded laterally across the rear occupant compartment in an upright position until the torso contacted the right rear inner door panel. The dummy rebounded off of the door panel and fell over onto its left side where it came to rest.

VEHICLE EXTERIOR PROFILES AND STATIC CRUSH

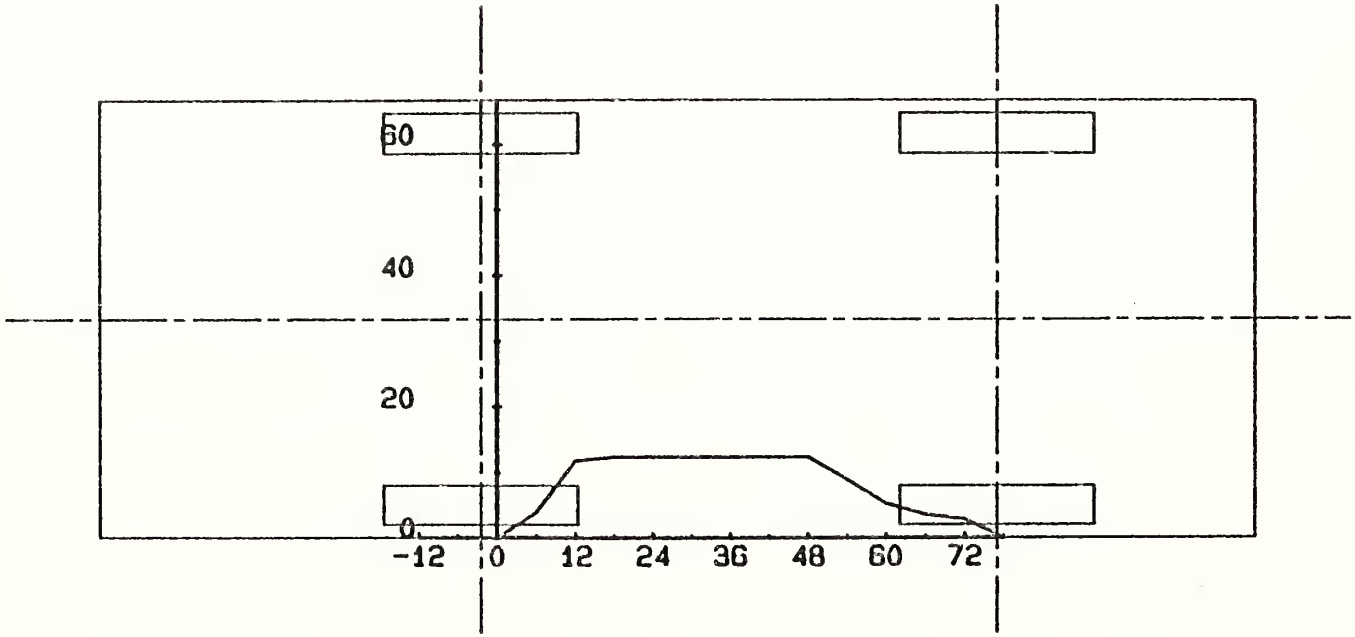
ZERO DISTANCE AT PROJECTED IMPACT POINT*

LOCATION	HEIGHT (in)	6	0	6	12	18	24	30	36	42	48	54	60	66	72	78
PRE-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE**)																
Axle Height	11.4	X	X	18.0	18.0	17.9	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.7	X
H-Point	18.7	X	15.4	15.6	15.5	15.4	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	X
Mid Door	22.8	X	15.8	15.7	15.5	15.4	15.3	15.3	15.3	15.3	15.3	15.2	15.2	15.3	15.3	X
Window Sill	33.9	17.9	17.8	17.6	17.5	17.4	17.3	17.3	17.2	17.2	17.2	17.2	17.1	17.2	17.2	17.3
Window Top	55.3	X	X	X	X	X	X	26.6	26.6	26.8	25.9	25.8	25.6	25.7	25.7	26.2
POST-TEST PROFILE (DISTANCE IN INCHES FROM REFERENCE PLANE**)																
Axle Height	11.4	X	X	21.9	29.8	30.3	30.1	30.1	30.1	30.1	30.1	26.8	23.1	21.3	20.5	X
H-Point	18.7	X	17.3	21.3	33.3	34.0	34.4	34.9	35.4	35.8	36.8	37.6	37.1	36.9	35.7	X
Mid Door	22.8	X	18.1	21.3	31.9	32.8	33.2	33.6	34.2	34.9	37.3	37.2	36.2	36.8	35.9	X
Window Sill	33.9	20.4	20.8	21.4	27.3	29.3	30.0	30.5	31.1	31.7	33.8	33.9	33.9	34.3	33.3	28.0
Window Top	55.3	X	X	X	X	X	X	31.1	31.1	31.3	30.8	30.3	29.6	29.3	28.9	29.1
STATIC CRUSH (IN)																
Axle Height	11.4	X	X	3.9	11.8	12.4	12.3	12.3	12.3	12.3	12.3	9.0	5.3	3.5	2.8	X
H-Point	18.7	X	1.9	5.7	17.8	18.6	19.1	19.6	20.1	20.5	21.5	22.3	21.8	21.6	20.4	X
Mid Door	22.8	X	2.3	5.6	16.4	17.4	17.9	18.3	18.9	19.6	22.0	22.0	21.0	21.5	20.6	X
Window Sill	33.9	2.5	3.0	3.8	9.8	11.9	12.7	13.2	13.9	14.5	16.6	16.7	16.8	17.1	16.1	10.7
Window Top	55.3	X	X	X	X	X	X	4.5	4.5	4.5	4.9	4.5	4.0	3.6	3.2	2.9

* Projected impact point is 37 inches forward of driver's side wheelbase midpoint. Column readings are front to rear from left to right.

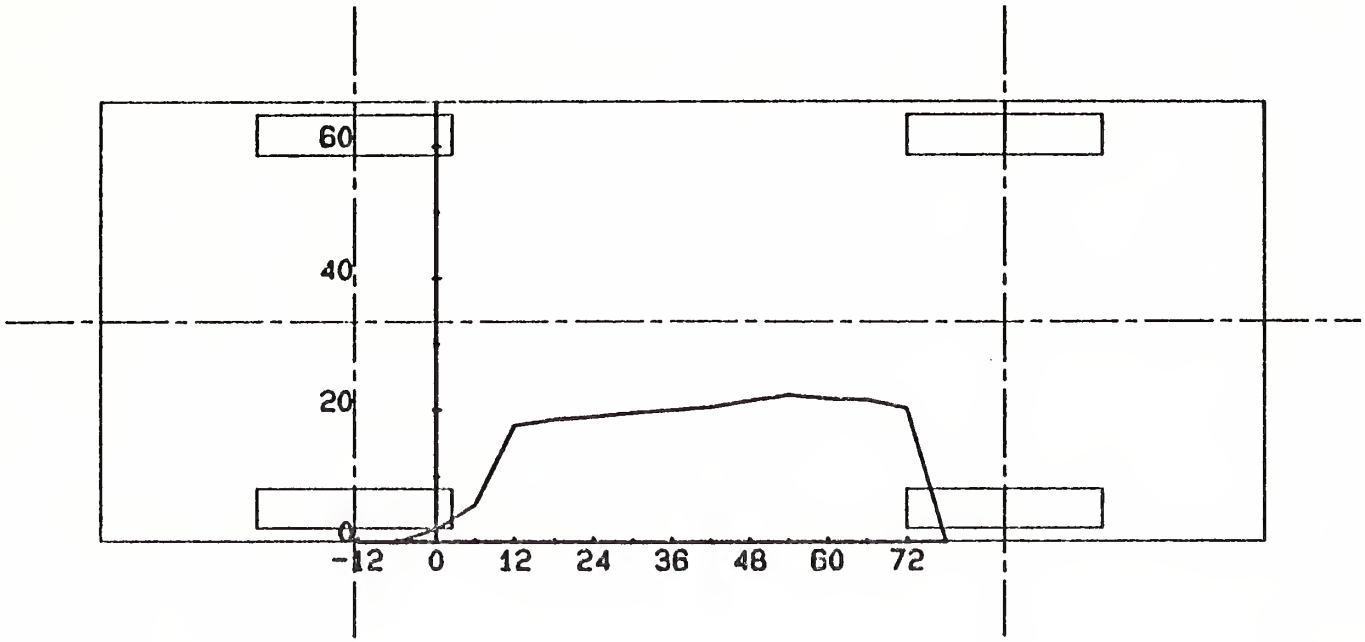
** Reference plane is parallel to and 48 inches from the vehicle longitudinal centerline.

VEHICLE EXTERIOR STATIC CRUSH PROFILE



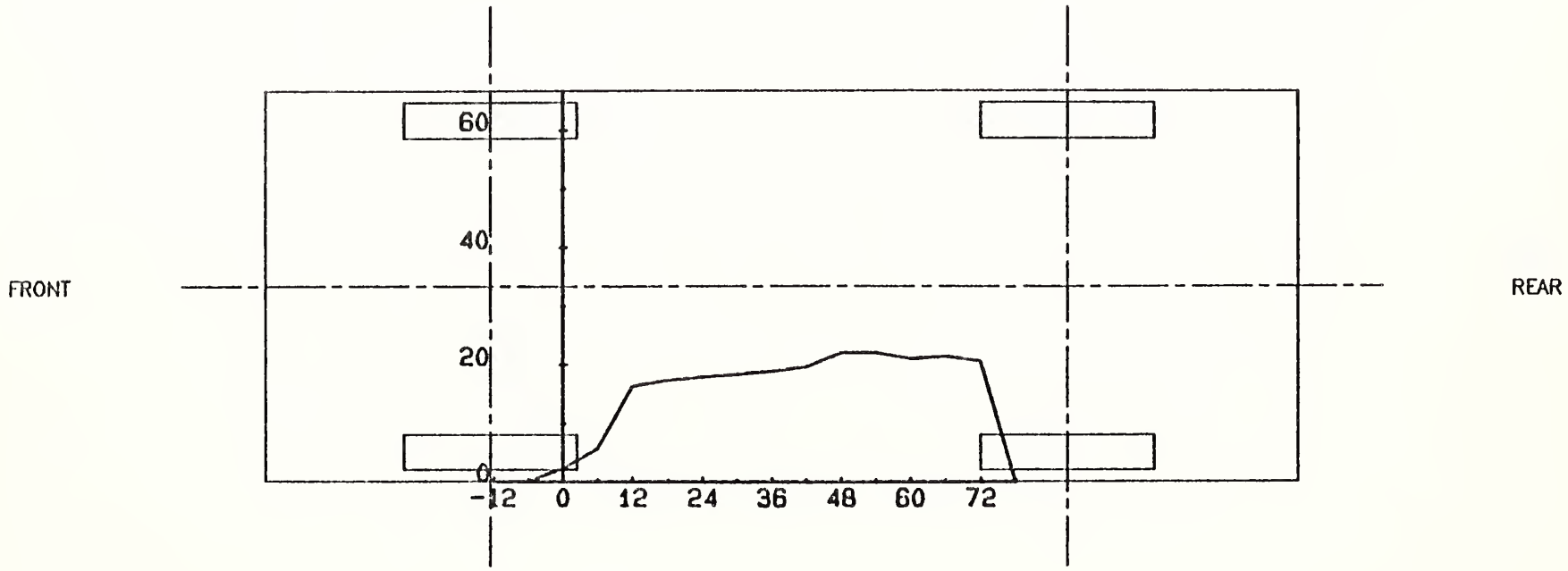
PROFILE LEVEL EQUALS AXLE HEIGHT WHICH IS 11.4 " ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT
SCALE FACTOR EQUALS 0.035

VEHICLE EXTERIOR STATIC CRUSH PROFILE



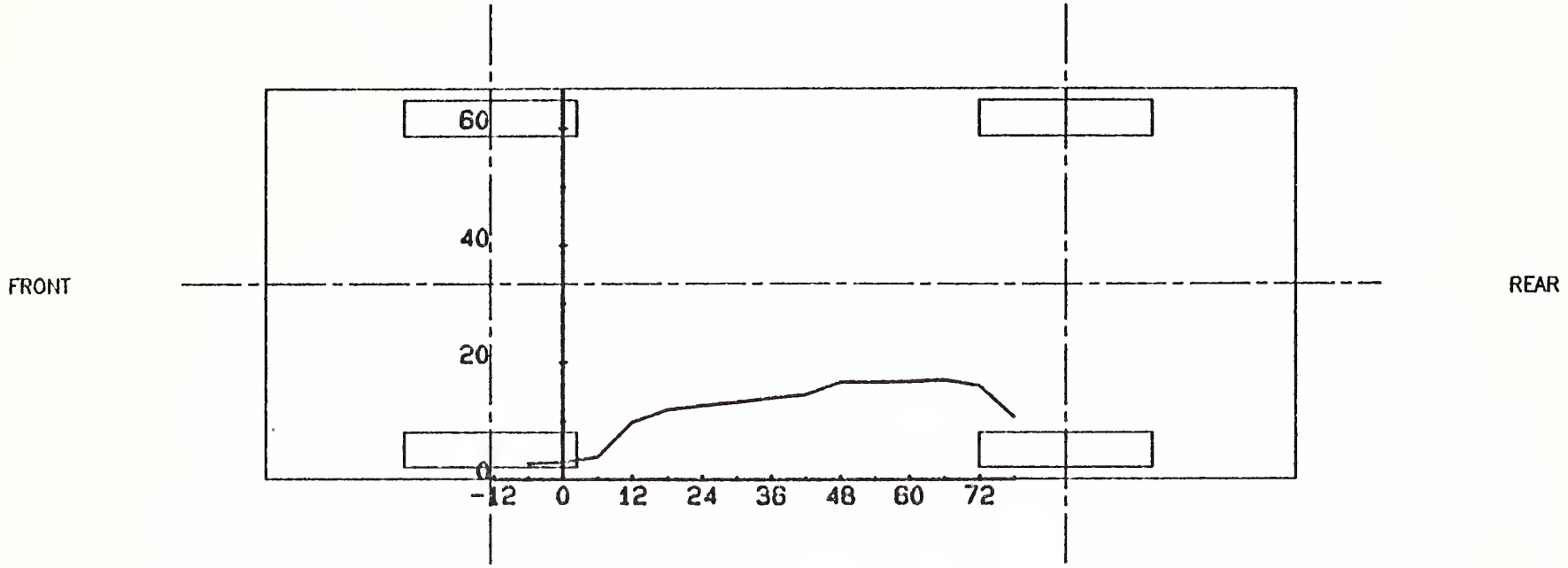
PROFILE LEVEL EQUALS H-POINT HEIGHT WHICH IS 18.7" ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT
SCALE FACTOR EQUALS 0.035

VEHICLE EXTERIOR STATIC CRUSH PROFILE



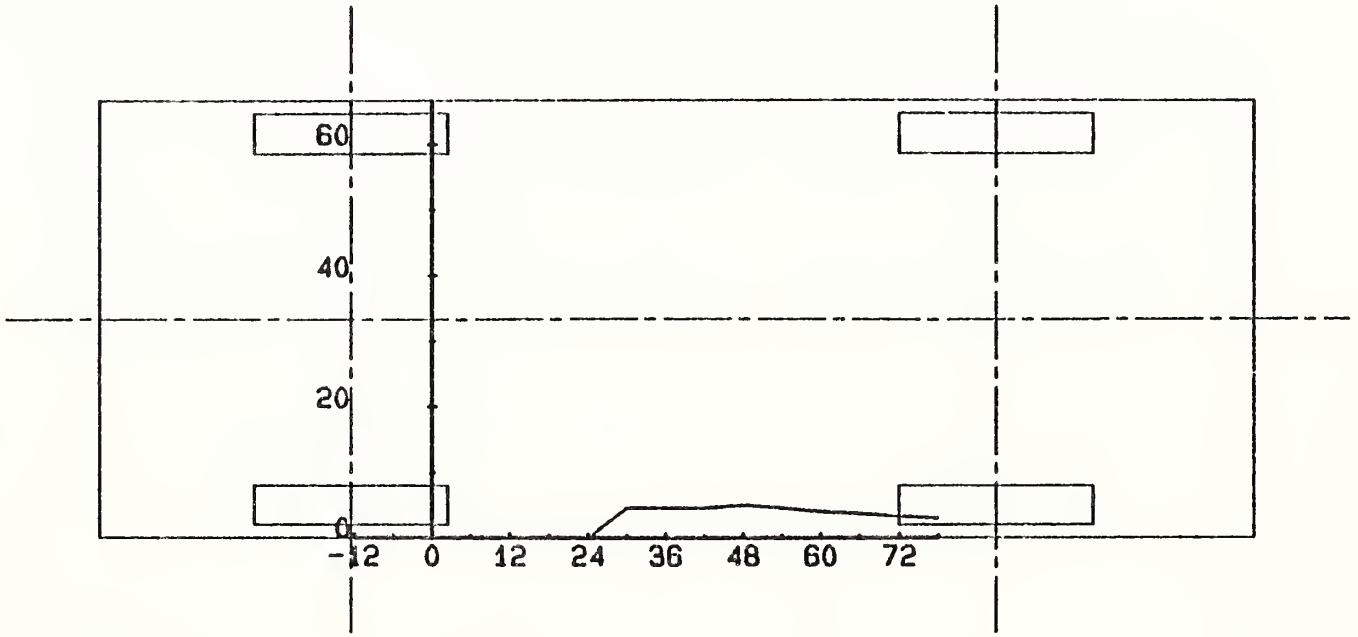
PROFILE LEVEL EQUALS MID DOOR HEIGHT WHICH IS 22.8 " ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT
SCALE FACTOR EQUALS 0.035

VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW SILL HEIGHT WHICH IS 33.9 " ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT
SCALE FACTOR EQUALS 0.035

VEHICLE EXTERIOR STATIC CRUSH PROFILE



PROFILE LEVEL EQUALS WINDOW TOP HEIGHT WHICH IS 55.3 " ABOVE GROUND LEVEL
(0,0) EQUALS PROJECTED IMPACT POINT
SCALE FACTOR EQUALS 0.035

SIDE IMPACT DUMMY DATA SUMMARY

	DRIVER DUMMY				PASSENGER DUMMY			
	POSITIVE DIRECTION*		NEGATIVE DIRECTION**		POSITIVE DIRECTION*		NEGATIVE DIRECTION**	
	MAX (g)	TIME (msec)	MAX (g)	TIME (msec)	MAX (g)	TIME (msec)	MAX (g)	TIME (msec)
HEAD ACCELERATION								
LONGITUDINAL	---	--- Y	---	---Y	11.60	38.75	18.87	50.88
LATERAL	58.00	86.00	22.83	34.63	92.35	58.25	22.32	38.63
VERTICAL	26.55	50.00	57.43	62.50	34.12	50.00	57.00	58.38
RESULTANT		--- @	--- Y			108.14 @	58.25	
HIC		--- from --- to --- Y				543.20 from 48.50 to 63.13 msec		
CHEST ACCELERATION								
UPPER SPINE								
LONGITUDINAL	14.83	34.38	22.70	40.63	19.94	53.12	26.50	41.25
LATERAL (P)***	124.93	40.00Y	32.93	67.50	124.38	42.50	33.05	65.00
LATERAL (R)***	129.61	40.00	32.91	67.50	127.15	42.50	39.06	65.00
VERTICAL	7.19	59.38	15.08	31.88	9.51	29.38	19.85	40.00
RESULTANT (P)		127.41 @ 40.00				127.42 @ 41.87		
RESULTANT (R)		132.00 @ 40.00				130.30 @ 41.87		
DELTA V (MPH)****		25.0 @ 60.63 (P)				26.0 @ 61.87 (P)		
		26.7 @ 61.25 (R)				27.4 @ 61.87 (R)		
LOWER SPINE								
LONGITUDINAL	26.86	54.38	24.26	36.88	24.03	53.12	13.91	28.75
LATERAL (P)	113.73	30.50Y	---	---Y	91.02	36.25	15.84	56.87
LATERAL (R)	112.33	32.50	11.31	56.87	95.57	36.25	14.82	56.87
VERTICAL	---	--- Y	---	---Y	23.90	37.50	7.32	51.25
RESULTANT (P)		--- @	---Y			93.77 @	36.88	
RESULTANT (R)		--- @	---Y			98.18 @	36.25	
DELTA V (MPH)		28.7 @ 54.38 (P)				26.6 @ 49.37 (P)		
		28.7 @ 54.38 (R)				28.0 @ 49.37 (R)		
LEFT UPPER RIB								
LATERAL (P)	100.39	35.63	8.87	88.13Y	126.52	37.50	10.55	50.00
LATERAL (R)	107.12	35.63	9.44	151.87	122.15	37.50	11.46	49.37
DELTA V (MPH)		25.1 @ 81.88 (P)				25.5 @ 85.00 (P)		
		25.0 @ 81.88 (R)				25.7 @ 85.00 (R)		
LEFT LOWER RIB								
LATERAL (P)	97.84	36.25	36.99	70.63	90.80	35.63	39.32	70.00
LATERAL (R)	96.39	36.25	13.68	71.25	92.88	35.00	38.95	70.00
DELTA V (MPH)		25.6 @ 59.38 (P)				29.2 @ 59.38 (P)		
		26.1 @ 60.00 (R)				29.0 @ 59.38 (R)		
PELVIS ACCELERATION								
LONGITUDINAL	10.84	29.50	39.01	37.25	9.47	73.50	41.06	29.63
LATERAL	177.83	31.38	13.38	58.13	224.33	30.38	8.54	74.75
VERTICAL	40.48	34.25	5.32	79.00	49.58	34.88	4.64	79.63
RESULTANT		179.36 @ 31.38				227.83 @ 30.38		
DELTA V (MPH)		27.1 @ 42.75				28.5 @ 39.63		

SIDE IMPACT DUMMY DATA SUMMARY CONTD

	DRIVER DUMMY				PASSENGER DUMMY			
	POSITIVE DIRECTION*		NEGATIVE DIRECTION**		POSITIVE DIRECTION*		NEGATIVE DIRECTION**	
	MAX (in)	TIME (msec)	MAX (in)	TIME (msec)	MAX (in)	TIME (msec)	MAX (in)	TIME (msec)
RIB DEFLECTION †	1.44	64.00	0.08	213.13	1.67	65.25	0.06	31.08

* LONGITUDINAL:	FORWARD	**LONGITUDINAL:	REARWARD
LATERAL:	RIGHTWARD	LATERAL:	LEFTWARD
VERTICAL:	UPWARD	VERTICAL:	DOWNWARD

*** (P) = Primary Sensor, (R) = Redundant Sensor

**** For dummy channels, Delta V is the velocity change at the approximate time of separation from the contact area.

† Compression: Positive

ϒ See TEST ANOMALIES

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

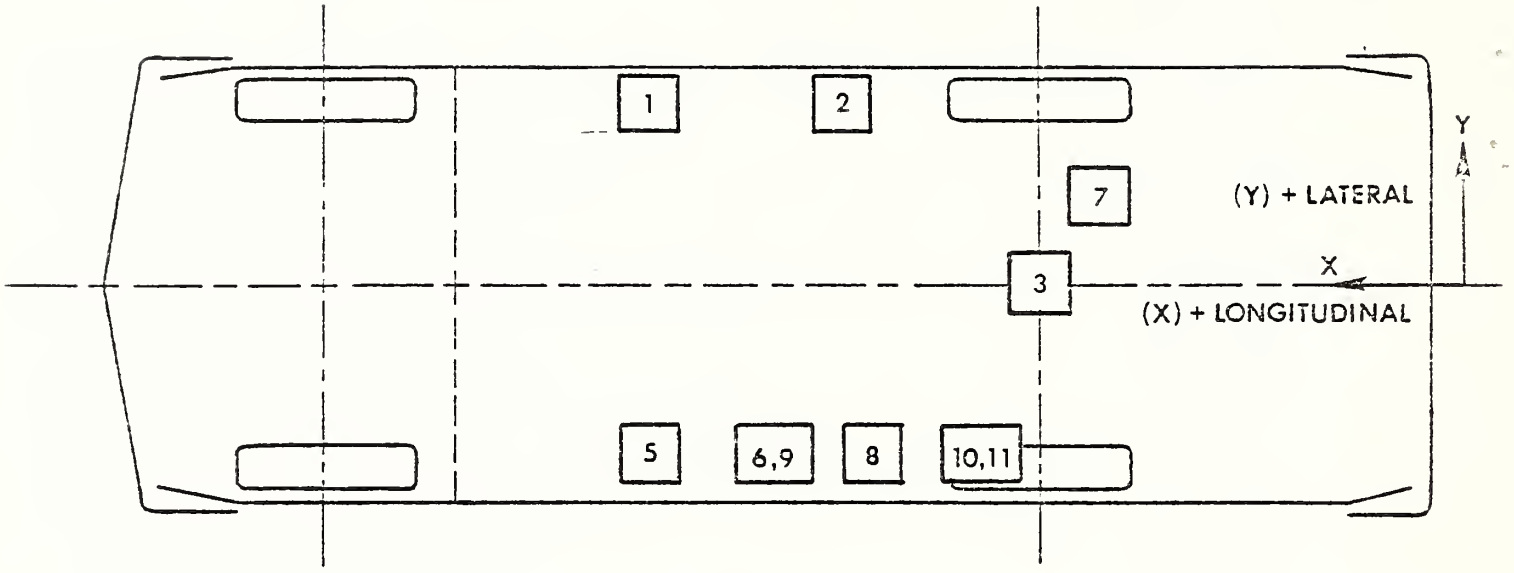
NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION MAX (g)	POSITIVE DIRECTION TIME (msec)	NEGATIVE DIRECTION MAX (g)	NEGATIVE DIRECTION TIME (msec)
1	RIGHT SILL AT FRONT SEAT	104.6	26.8	8.3				
	(LONGITUDINAL)	Δ V = -0.8 mph @ 130.00 msec			1.76	38.00	5.54	22.75
	(LATERAL)	Δ V = 13.3 mph @ 130.00 msec			14.41	11.75	1.94	156.38
	(VERTICAL)				2.46	14.25	2.80	65.25
	(RESULTANT)					14.75 @ 11.75		
2	RIGHT SILL AT REAR SEAT	72.9	26.3	9.5				
	(LONGITUDINAL)	Δ V = 0.2 mph @ 130.00 msec			8.24	115.88	6.05	29.75
	(LATERAL)	Δ V = 14.6 mph @ 130.00 msec			12.88	14.63	2.35	152.25
	(VERTICAL)				3.86	28.38	3.65	49.00
	(RESULTANT)					13.42 @ 14.75		
3	REAR DECK OVER AXLE	37.8	0.0	18.0				
	(LONGITUDINAL)	Δ V = -1.5 mph @ 130.00 msec			6.59	32.88	6.86	20.63
	(LATERAL)	Δ V = 18.8 mph @ 130.00 msec			13.84	37.00	2.81	160.00
	(VERTICAL)				11.18	70.38	12.75	64.88
	(RESULTANT)					16.73 @ 64.50		
4	LEFT SILL AT REAR SEAT	72.0	-26.5	8.0				
	(LATERAL)	Δ V = 12.1 mph @ 40.13 msec			36.56	26.50	24.15	50.13
5	LEFT SILL AT FRONT SEAT	103.5	-26.0	8.3				
	(LATERAL)	Δ V = --- mph @ --- msec Y			---	--- Y	---	--- Y
6	LEFT FRONT DOOR CENTERLINE	100.8	-28.1	19.5				
	(LATERAL)	Δ V = --- mph @ --- msec Y			---	--- Y	---	--- Y
7	RIGHT REAR COMPARTMENT	33.6	16.9	18.8				
	(LONGITUDINAL)				4.17	84.75	6.79	24.00
8	MIDREAR OF LEFT FRONT DOOR	92.4	-28.1	22.0				
	(LATERAL)	Δ V = --- mph @ --- msec Y			---	--- Y	---	--- Y
9	UPPER LEFT FRONT DOOR CENTERLINE	100.6	-28.3	27.5				
	(LATERAL)	Δ V = 18.3 mph @ 19.63 msec			87.34	15.13	20.69	33.63
10	MIDREAR OF LEFT REAR DOOR	61.8	-29.5	19.3				
	(LATERAL)	Δ V = 23.0 mph @ 20.25 msec			194.92	11.13	112.38	26.25
11	UPPER REAR OF LEFT REAR DOOR	61.8	-29.1	26.5				
	(LATERAL)	Δ V = 21.6 mph @ 18.38 msec			133.78	12.00	106.16	27.13

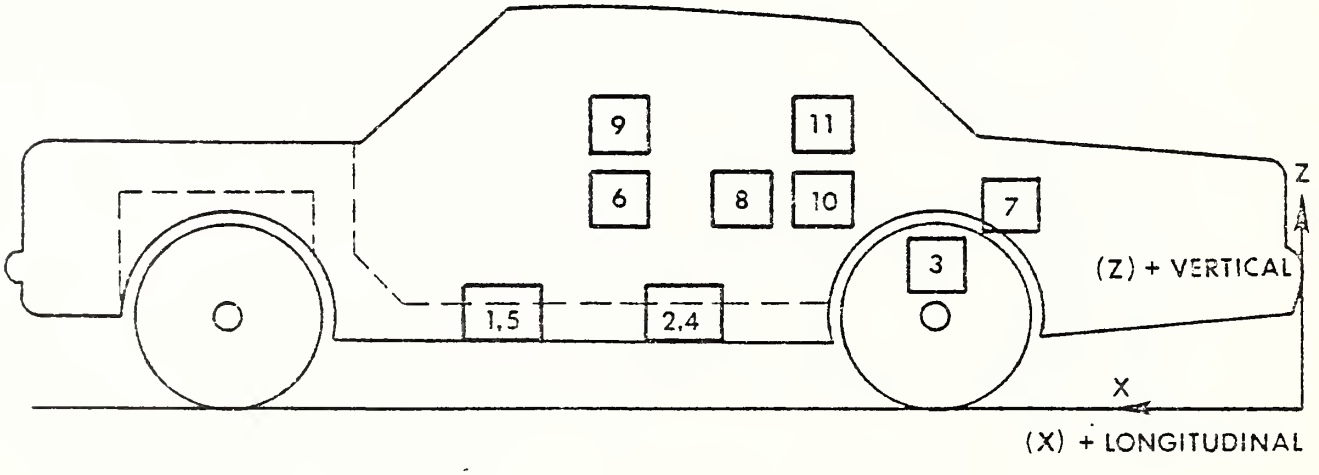
* Reference: X - Rear Bumper (+ Forward), Y - Vehicle Centerline (+ To Right), Z - Ground Level (+ Up)

All measurements of accelerometer locations in inches.

YSee TEST ANOMALIES

VEHICLE ACCELEROMETER LOCATIONS





YAW RATE GYRO LOCATION AND DATA SUMMARY

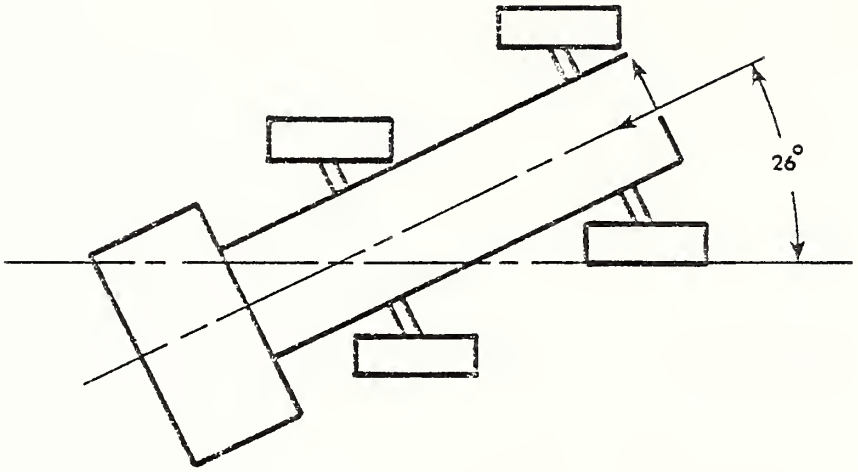
LOCATION	X*	Y*	Z*	POSITIVE DIRECTION MAX (deg/sec)	POSITIVE DIRECTION TIME (msec)	NEGATIVE DIRECTION MAX (deg/sec)	NEGATIVE DIRECTION TIME (msec)
YAW RATE GYRO	102.5	0.0	16.1	142.62	26.63	213.27	50.88

*Reference: X - Rear Bumper (+ forward), Y - Vehicle Centerline (+ to right),
Z - Ground Level (+ up)

All measurements of rate gyro in inches.

Yaw rotation is positive when measured counterclockwise as viewed from above.

MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY



NO.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION MAX (g)	POSITIVE DIRECTION TIME (msec)	NEGATIVE DIRECTION MAX (g)	NEGATIVE DIRECTION TIME (msec)
1	CENTER OF GRAVITY	73.5	0.0	12.8				
	(LONGITUDINAL)	ΔV = -17.1 mph @ 130.00 msec			0.82	164.25	14.30	36.13
	(LATERAL)	ΔV = -3.5 mph @ 130.00 msec			1.58	76.75	5.08	38.13
	(VERTICAL)				4.92	73.00	4.54	68.25
	(RESULTANT)					15.35 @ 36.50		
2	REAR FRAME MEMBER	19.4	-18.5	12.7				
	(LONGITUDINAL)	ΔV = -16.5 mph @ 130.00 msec			1.80	158.25	15.77	35.25
	(LATERAL)	ΔV = 0.4 mph @ 130.00 msec			4.66	30.38	2.67	134.25

* Reference: X - Rear Most Point of Frame (+ To Forward), Y - Barrier Centerline (+ To Right), Z - Ground Level (+ To Up)

All measurements of accelerometer locations in inches.

CAMERA INFORMATION

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Onboard MDB - Tight	Photosonic 1B	25	975	Closeup of impact point
2	Onboard MDB - Tight	Photosonic 1B	13	988	Dummy Kinematics
3	Overhead - Tight	Photosonic 1B	25	1022	Closeup of impact point
4	Overhead - Wide	Photosonic 1B	8	930	Vehicle Dynamics
5	Cround Level - Right	Photosonic 1B	25	770	Overall View
6	Ground Level - Left	Photosonic 1B	17	1095	Overall View
7	Onboard Windshield	Photosonic 1B	8	997	Driver Kinematics - front view
8	Onboard Roof	Photosonic 1B	8	980	Door/Driver contact velocity
9	Onboard Driver	Photosonic 1B	8	1005	Driver Kinematics
10	Onboard Passenger	Photosonic 1B	8	995	Passenger Kinematics

LOCATIONS OF OFFBOARD HIGH SPEED CAMERAS

CAMERA NO.	X	Y	Z
1	0	0	25'
2	0	0	25'
5	24'10"	58'8"	45"
6	-20'11"	-13'	45"

Origin of Coordinate System is Point of Impact

+X = Forward with Respect to Striking Vehicle's Velocity Vector
+Y = Rightward with Respect to Striking Vehicle's Velocity Vector
+Z = Upward with Respect to Striking Vehicle's Velocity Vector

NON-GOVERNMENT FURNISHED TRANSDUCER INFORMATION

PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NUMBER	SERIAL NUMBER	MFGR.	DATE OF LAST CALIBRATION	SENSITIVITY	DESIRED FULL SCALE (ENGR. UNITS)
BCGXG	Accel	4-202-0001	18851	Bell Howell	6/17/85	.241 MV/G	50 G
BCGYG	Accel	4-202-0001	18859	Bell Howell	6/17/85	.238 MV/G	50 G
BCGZG	Accel	4-202-0001	18847	Bell Howell	6/17/85	.246 MV/G	50 G
BFCXG	Accel	4-202-0001	18240	Bell Howell	6/12/85	.240 MV/G	50 G
BRCXG	Accel	4-202-0001	19022	Bell Howell	6/12/85	.222 MV/G	50 G

All dummy and struck vehicle accelerometers were Government Furnished Equipment and were Endevco 2264 Accelerometers.

APPENDIX A

PHOTOGRAPHS

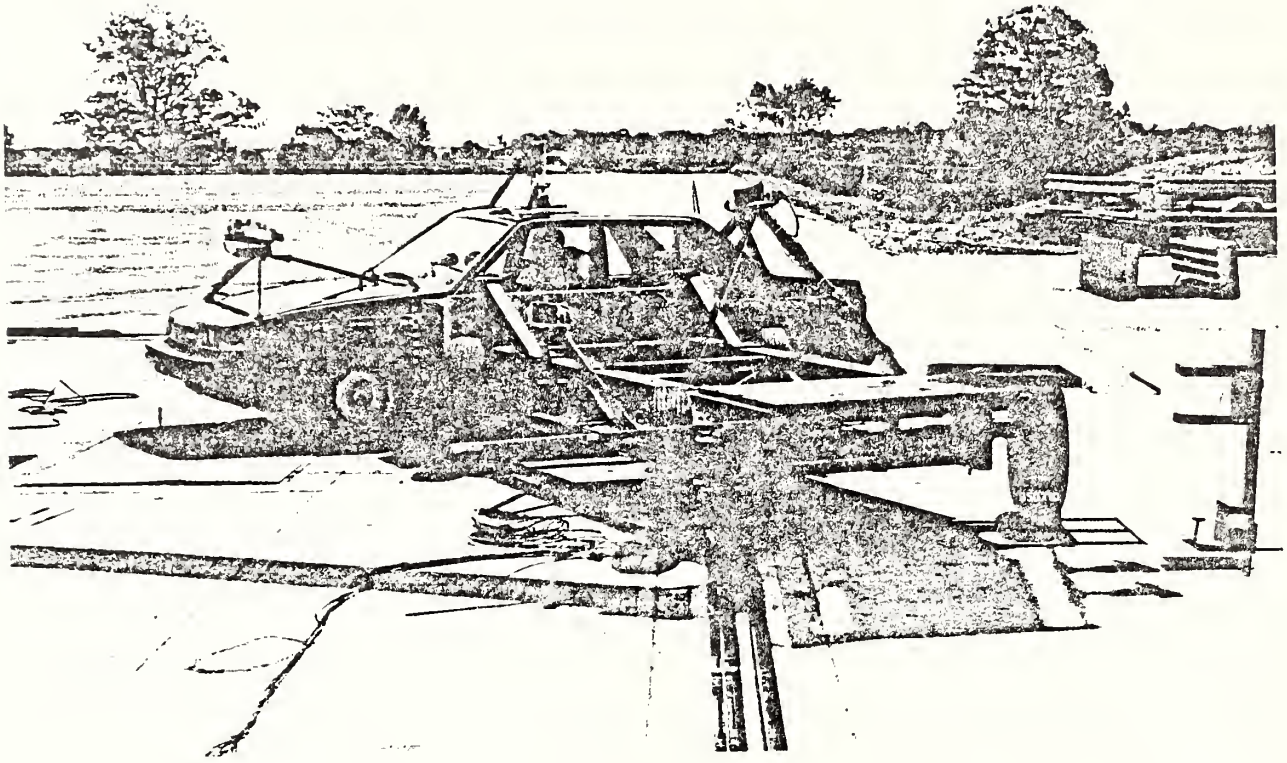


Figure A-1. PRE-TEST OVERALL - VIEW 1

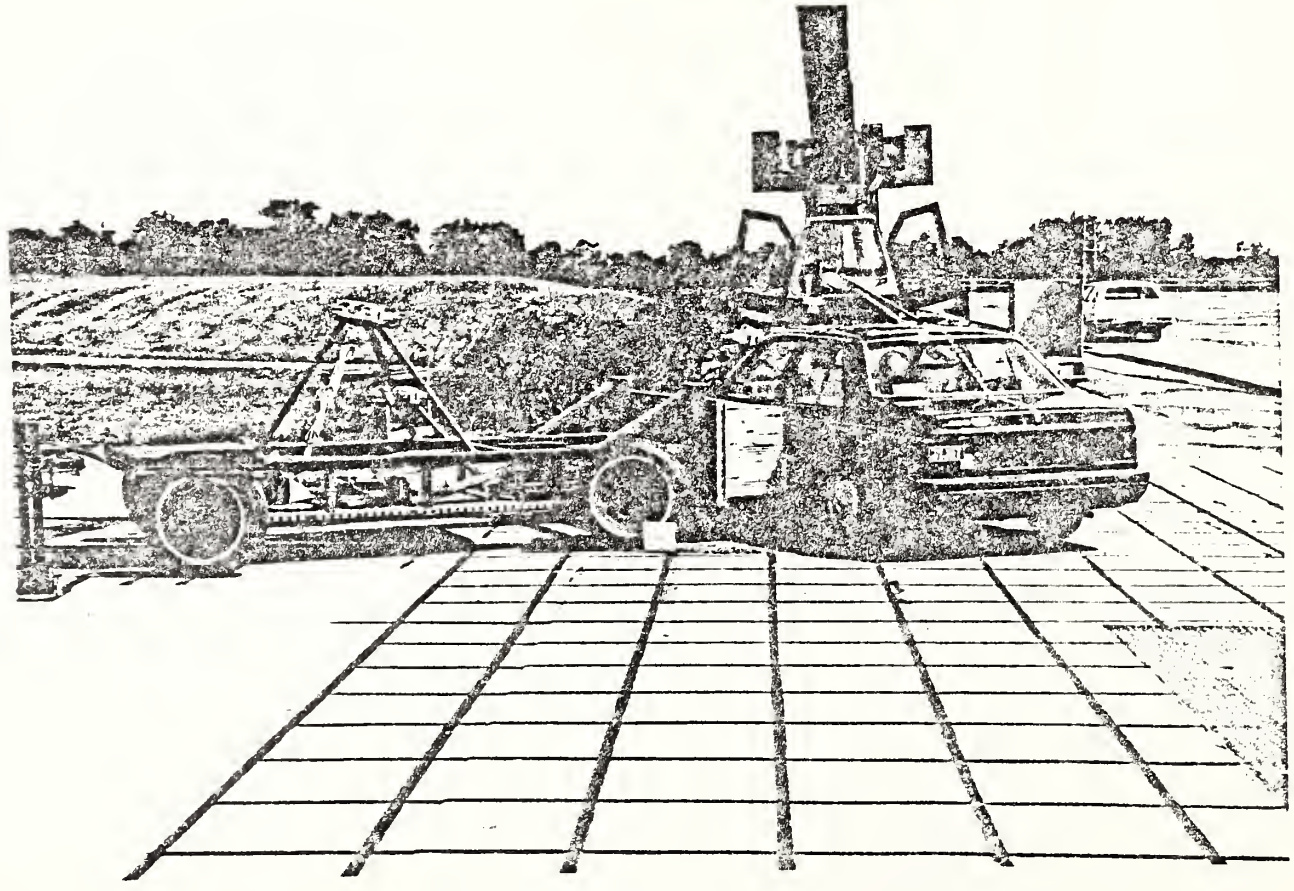


Figure A-2. PRE-TEST OVERALL - VIEW 2

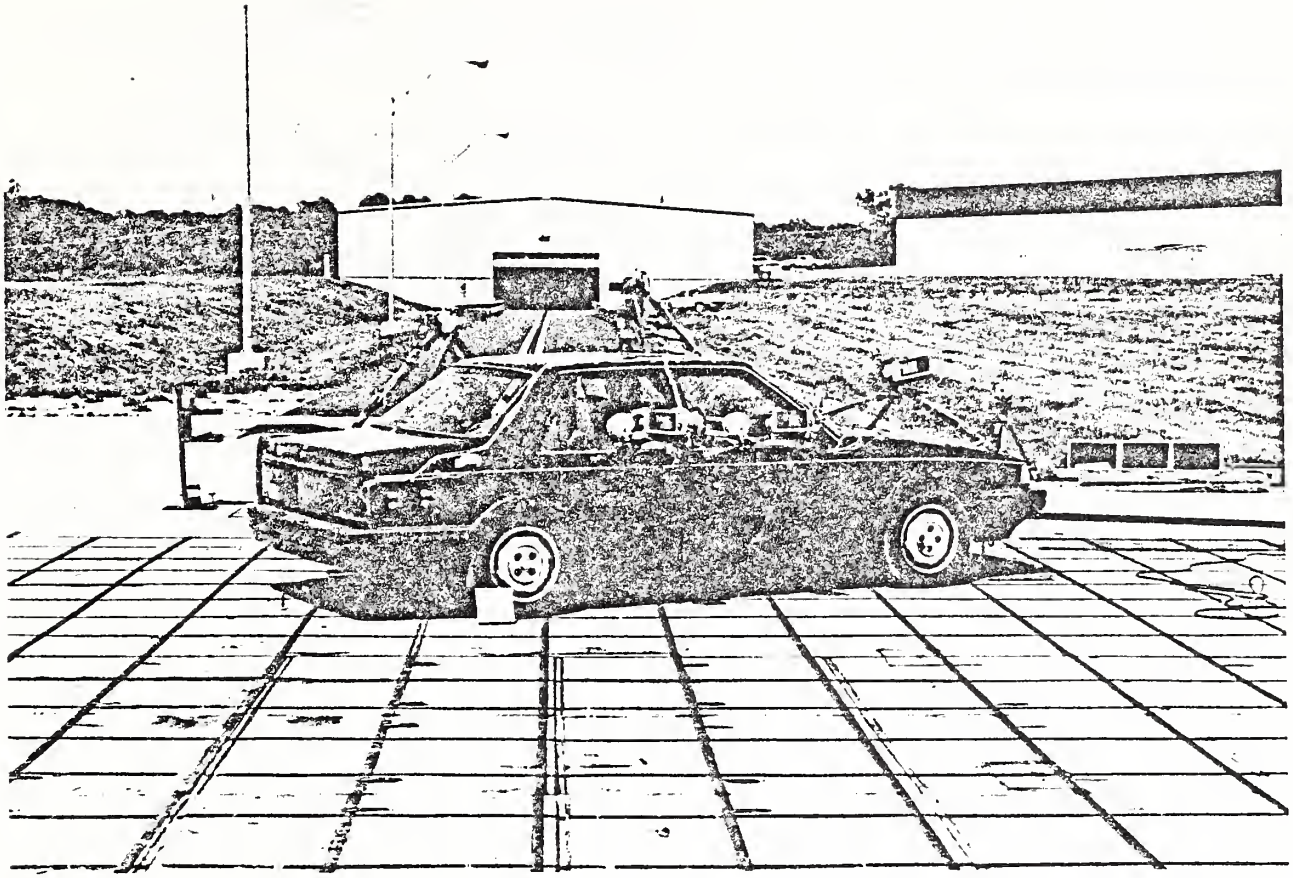


Figure A-3. PRE-TEST OVERALL - VIEW 3

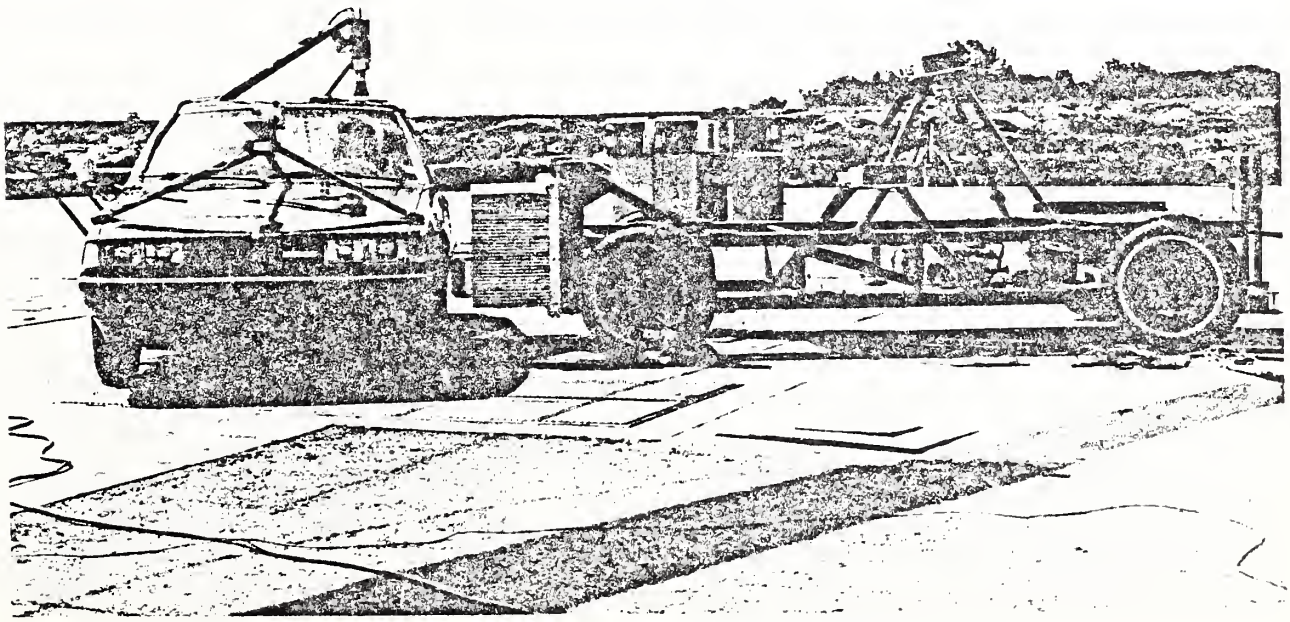


Figure A-4. PRE-TEST OVERALL - VIEW 4

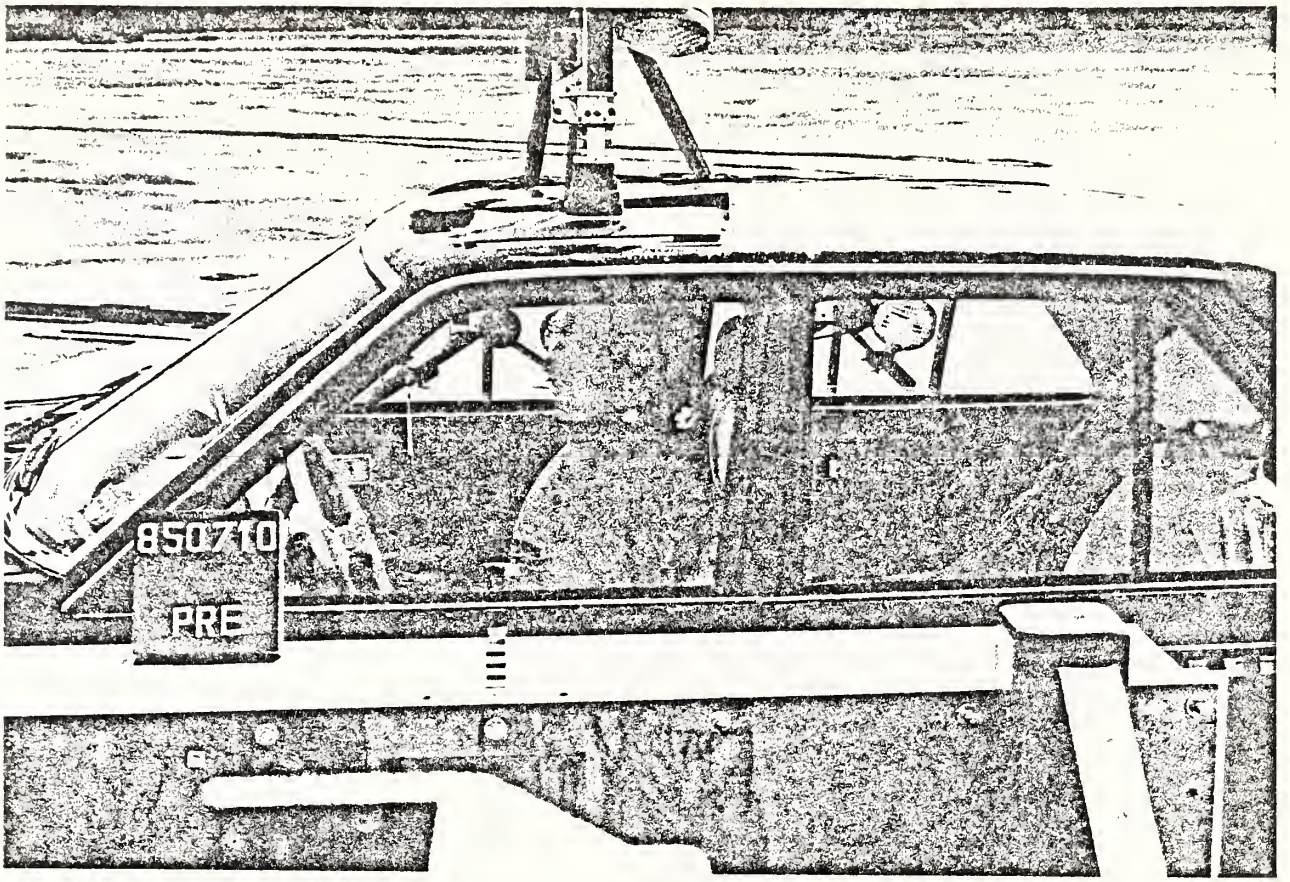


Figure A-5. PRE-TEST CLOSEUP - VIEW 1

Figure A-6. PRE-TEST CLOSEUP - VIEW 2

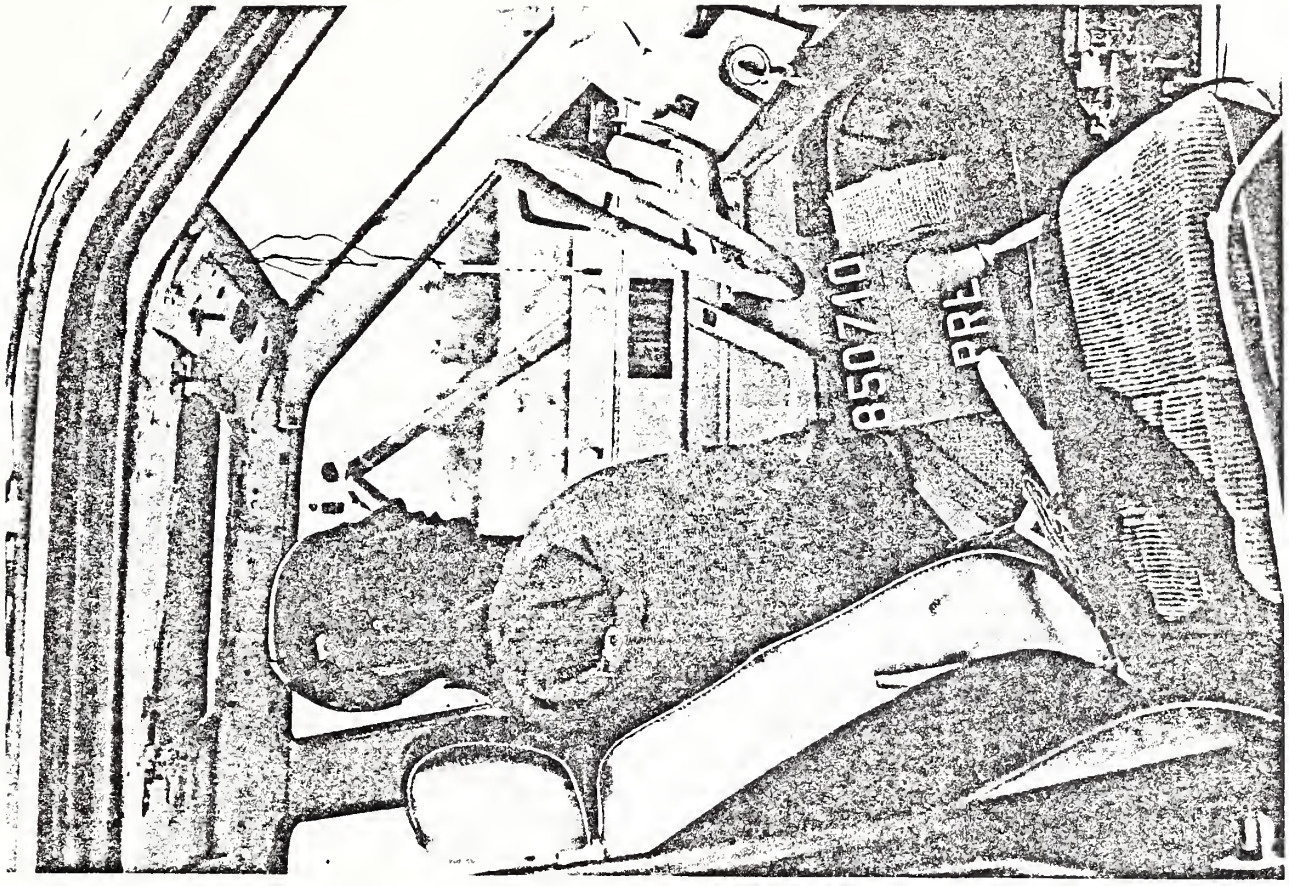


Figure A-7. PRE-TEST DRIVER DUMMY VIEW

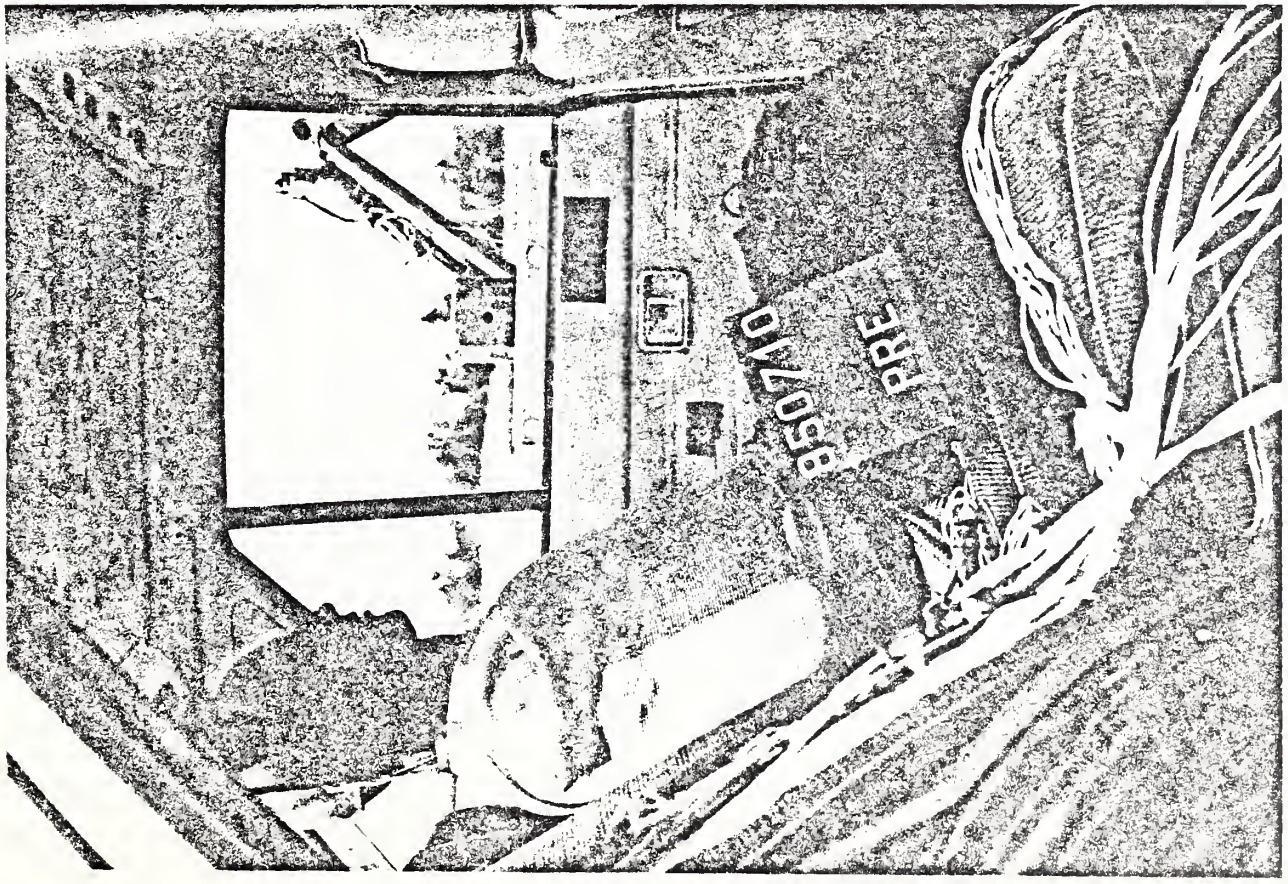


Figure A-8. PRE-TEST PASSENGER DUMMY VIEW

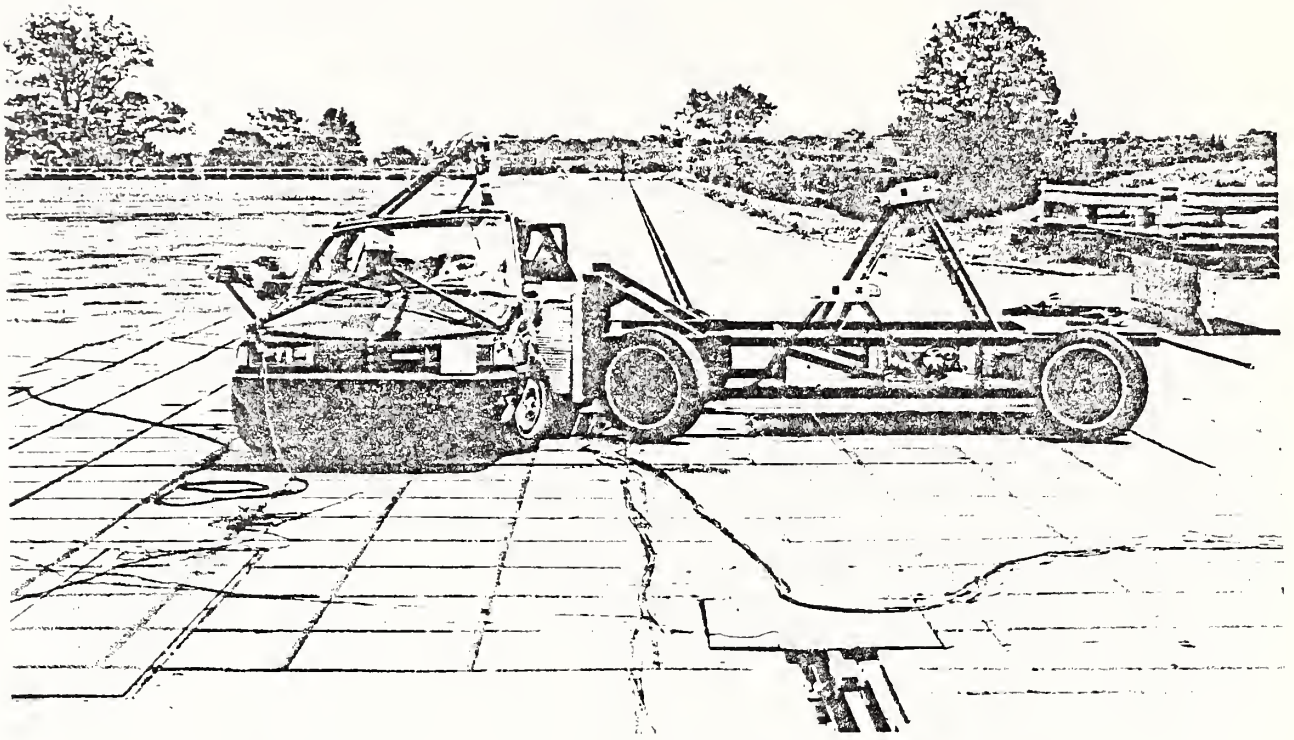


Figure A-9. POST-TEST OVERALL - VIEW 1

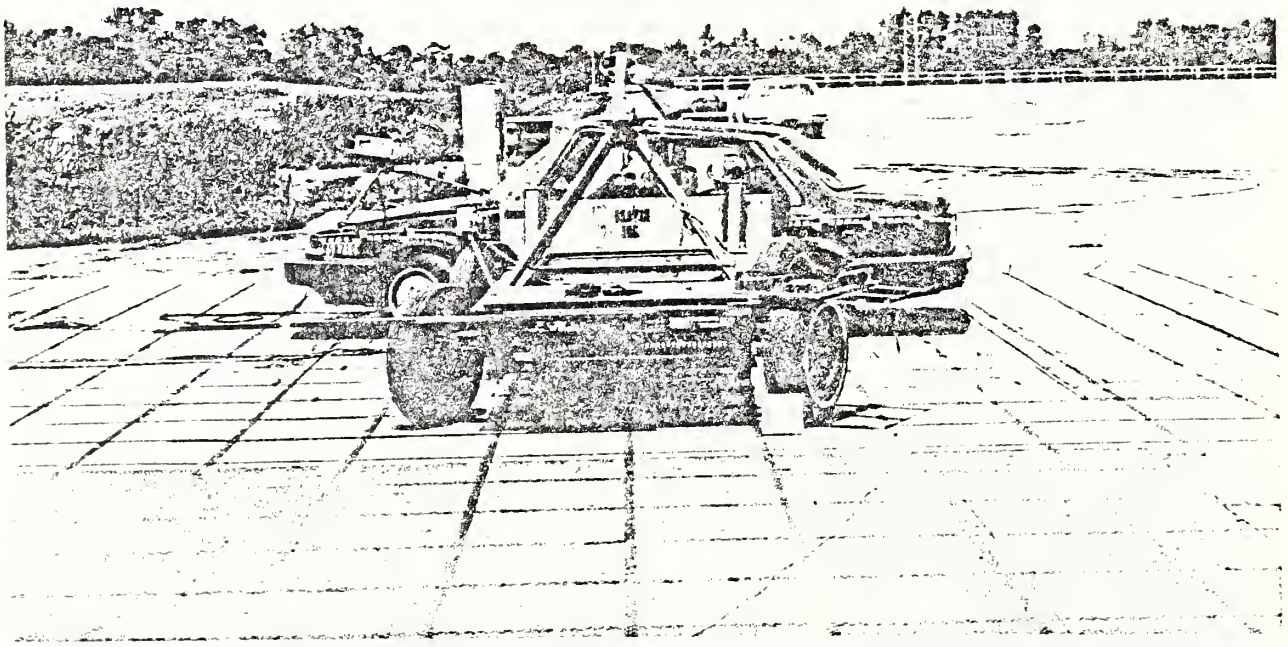


Figure A-10. POST-TEST OVERALL - VIEW 2

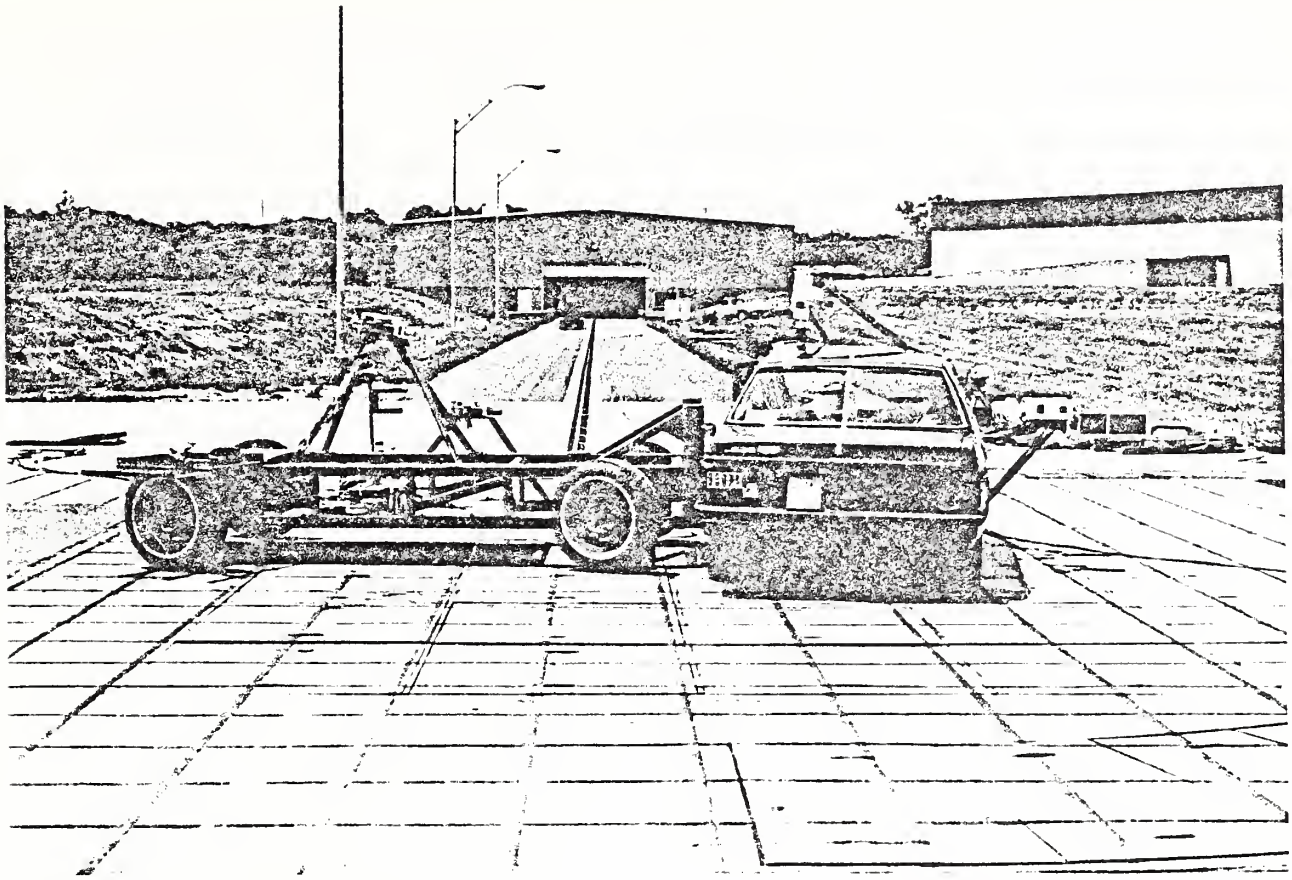


Figure A-11. POST-TEST OVERALL - VIEW 3

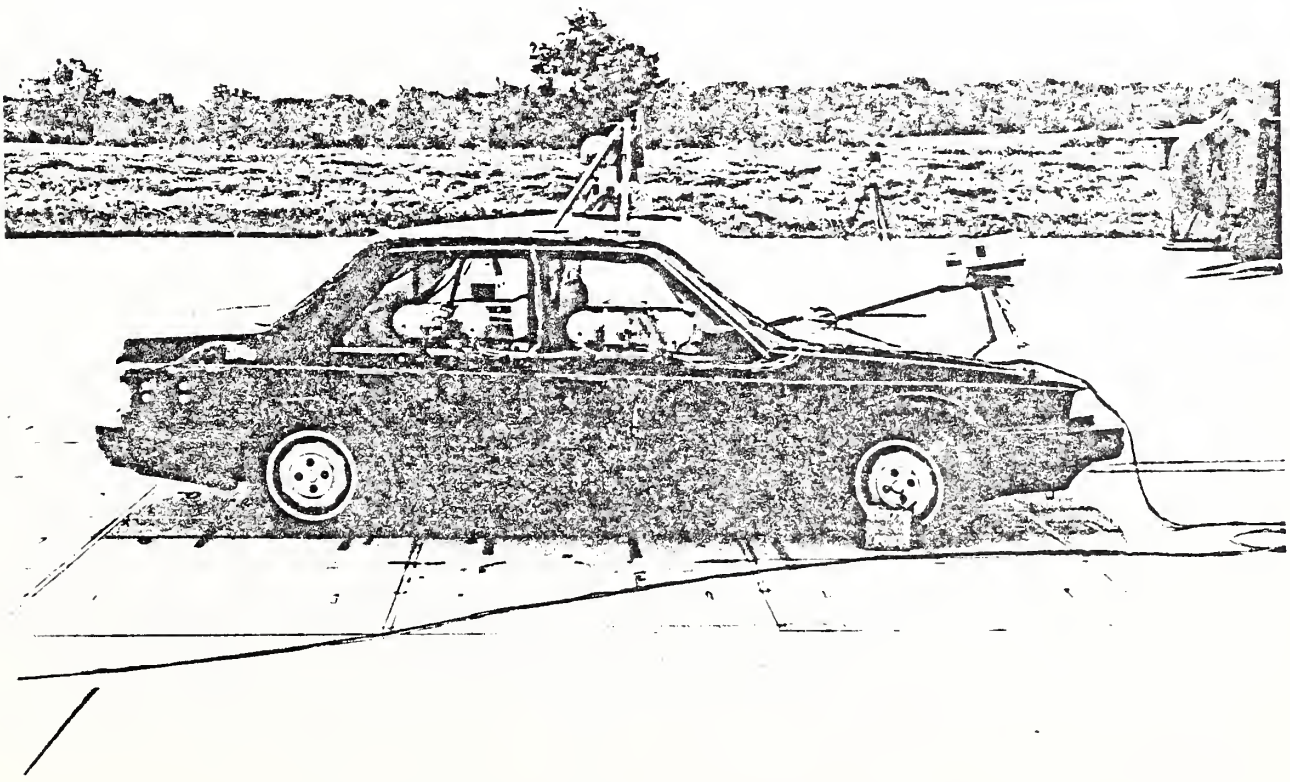


Figure A-12. POST-TEST OVERALL - VIEW 4

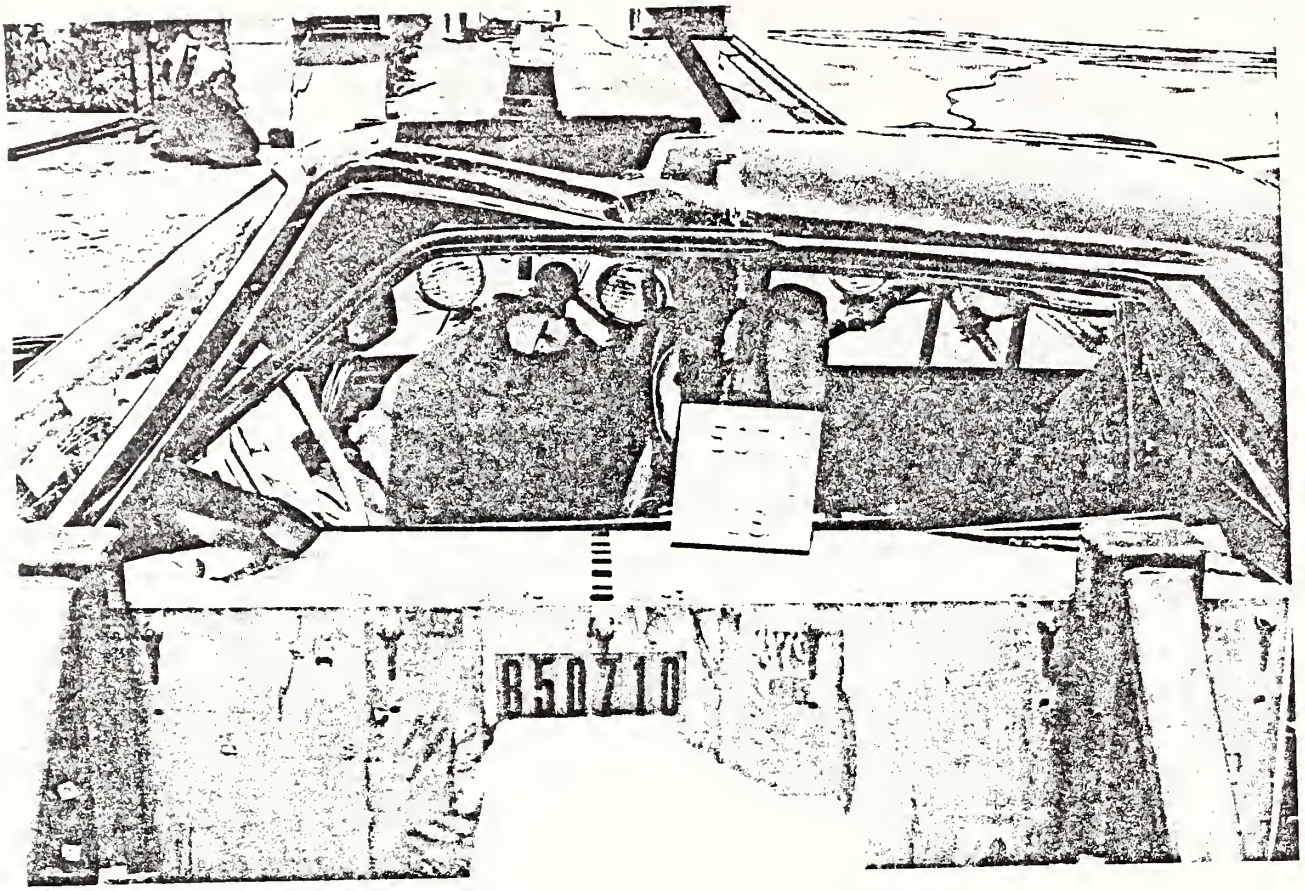


Figure A-13. POST-TEST CLOSEUP VIEW

Figure A-14. POST-TEST DRIVER DUMMY VIEW

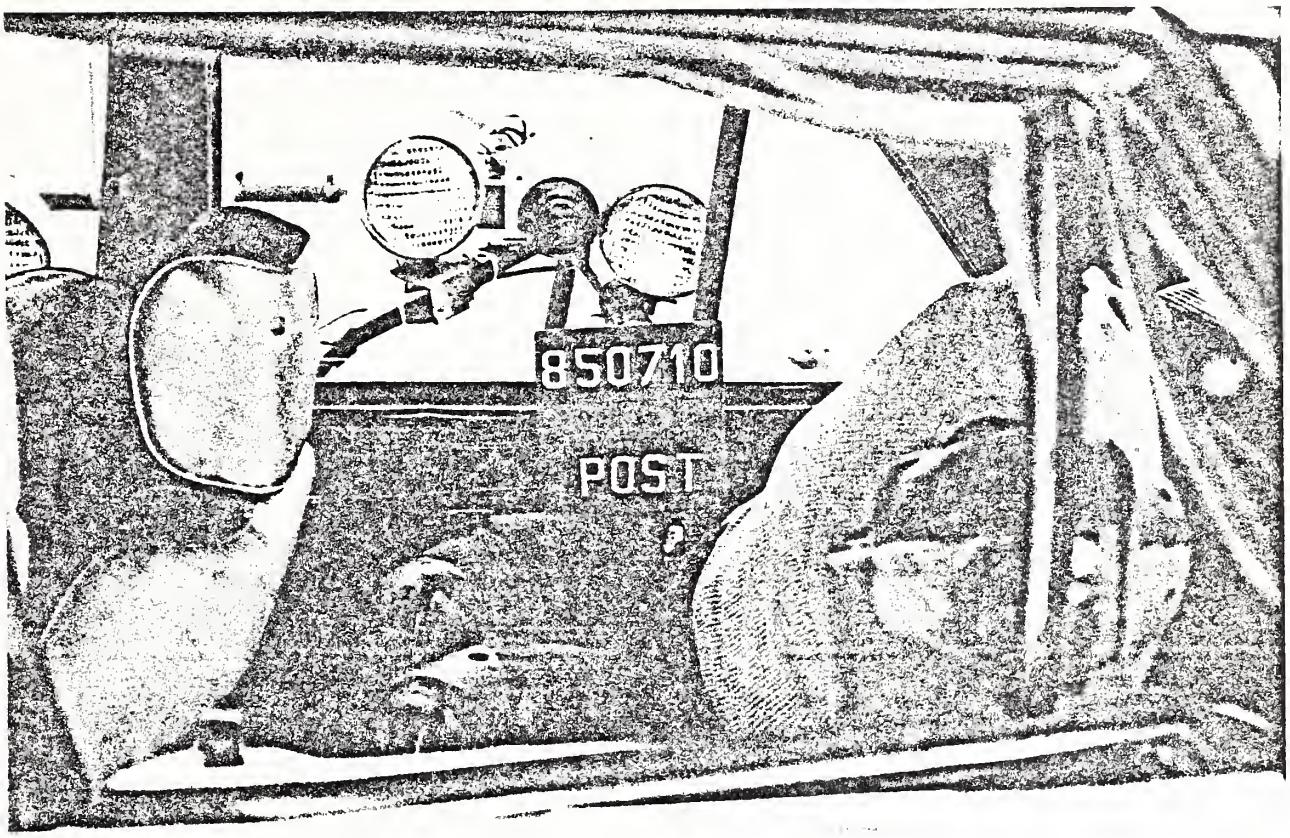


Figure A-15. POST-TEST PASSENGER DUMMY VIEW

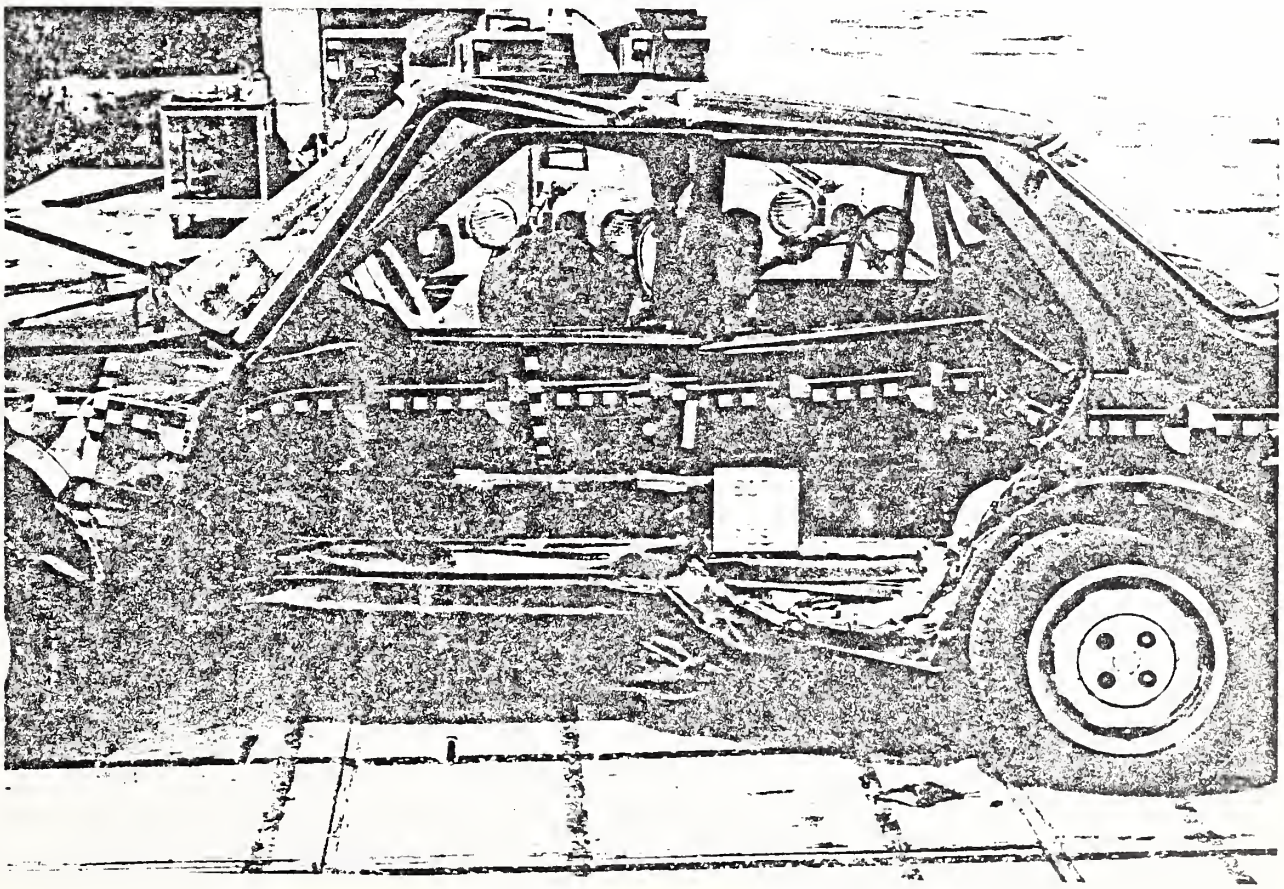


Figure A-16. POST-TEST VEHICLE DAMAGE - VIEW 1

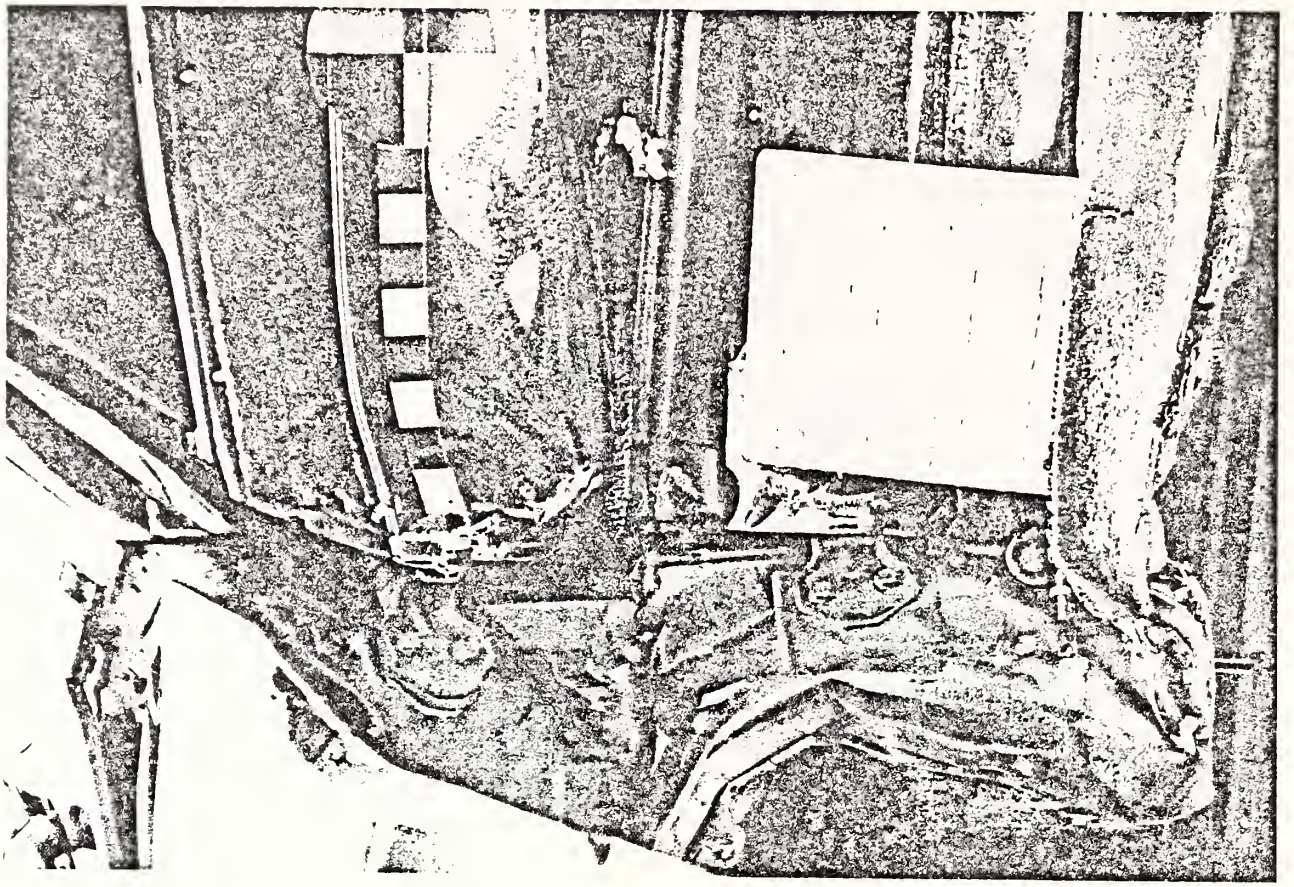


Figure A-17. POST-TEST VEHICLE DAMAGE - VIEW 2

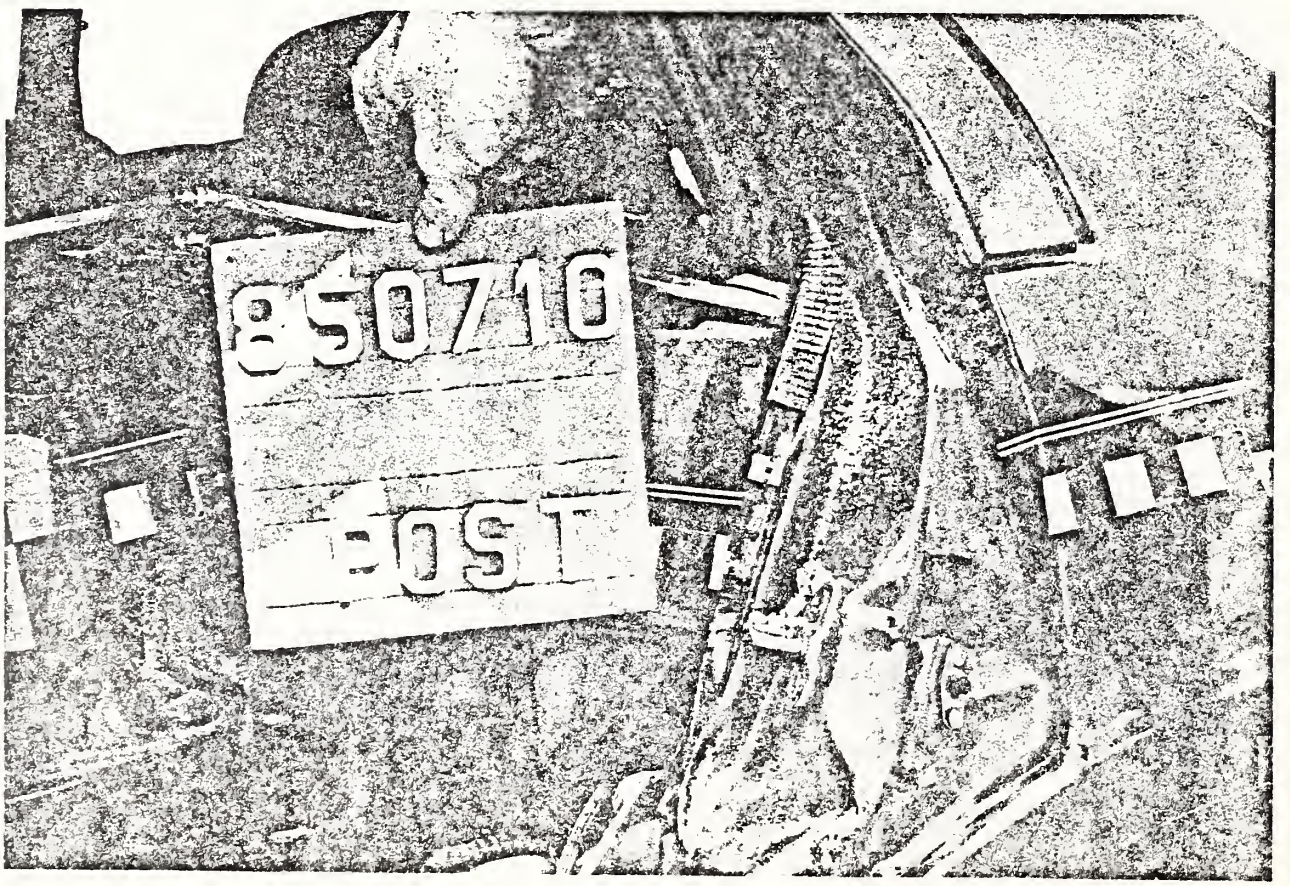


Figure A-18. POST-TEST VEHICLE DAMAGE - VIEW 3

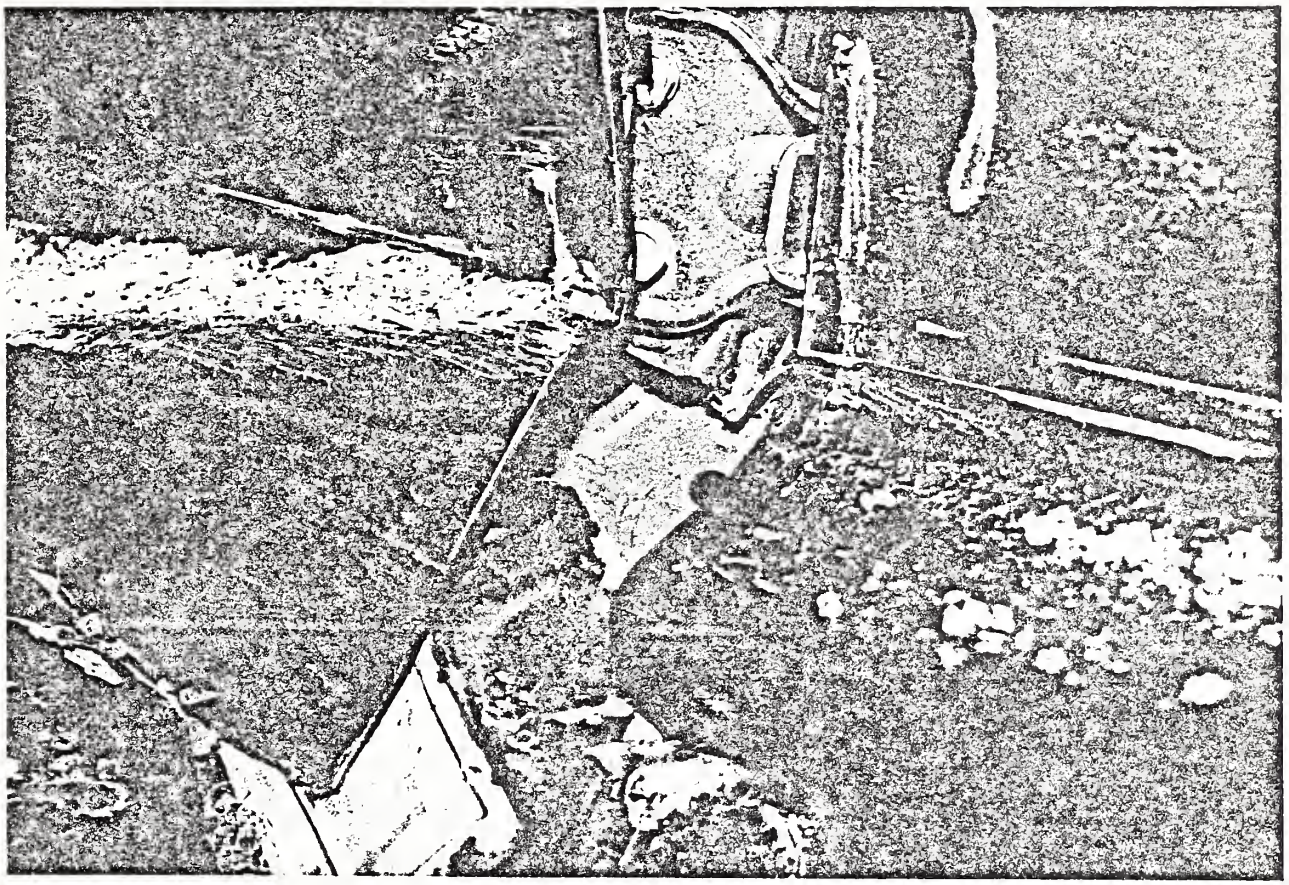


Figure A-19. POST-TEST VEHICLE DAMAGE - VIEW 4

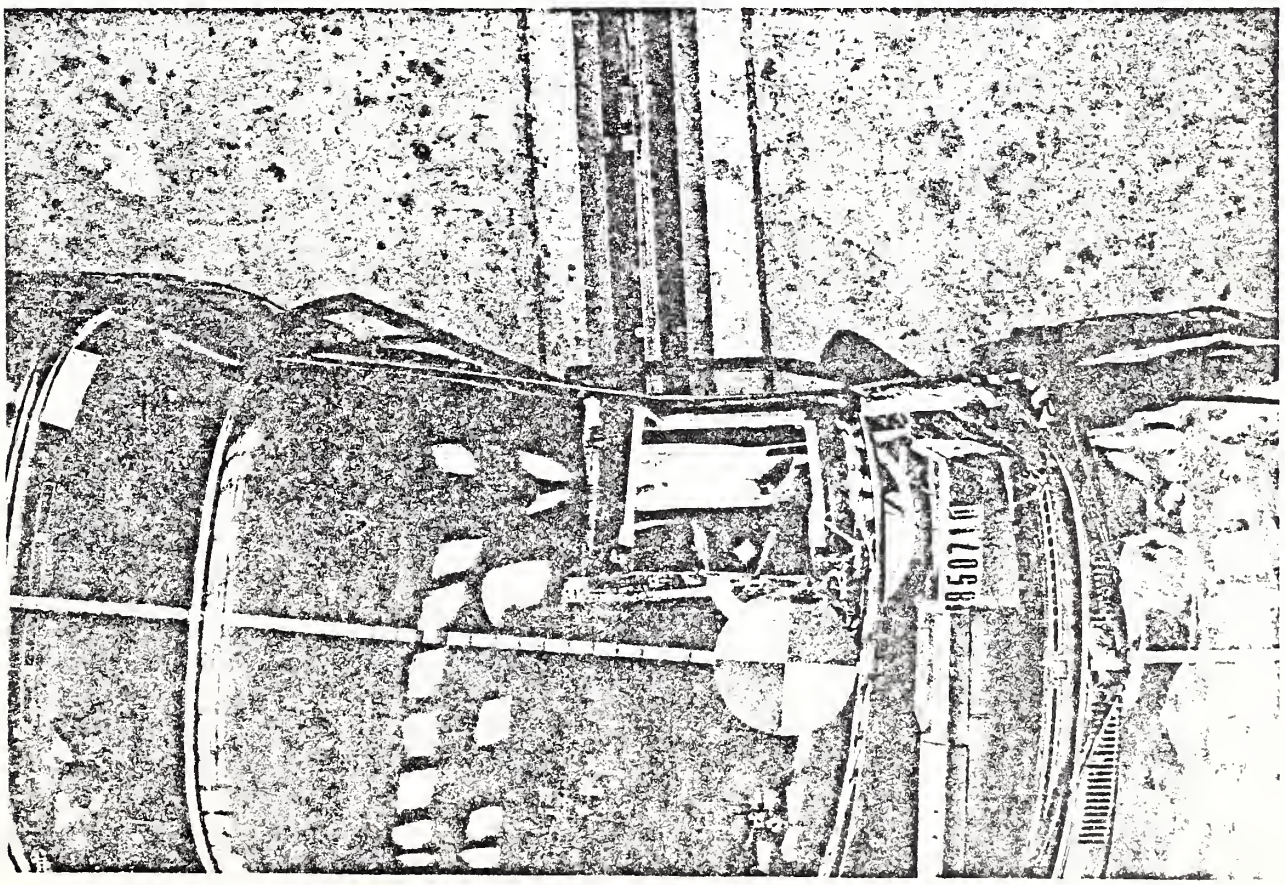


Figure A-20. POST-TEST OVERHEAD VIEW

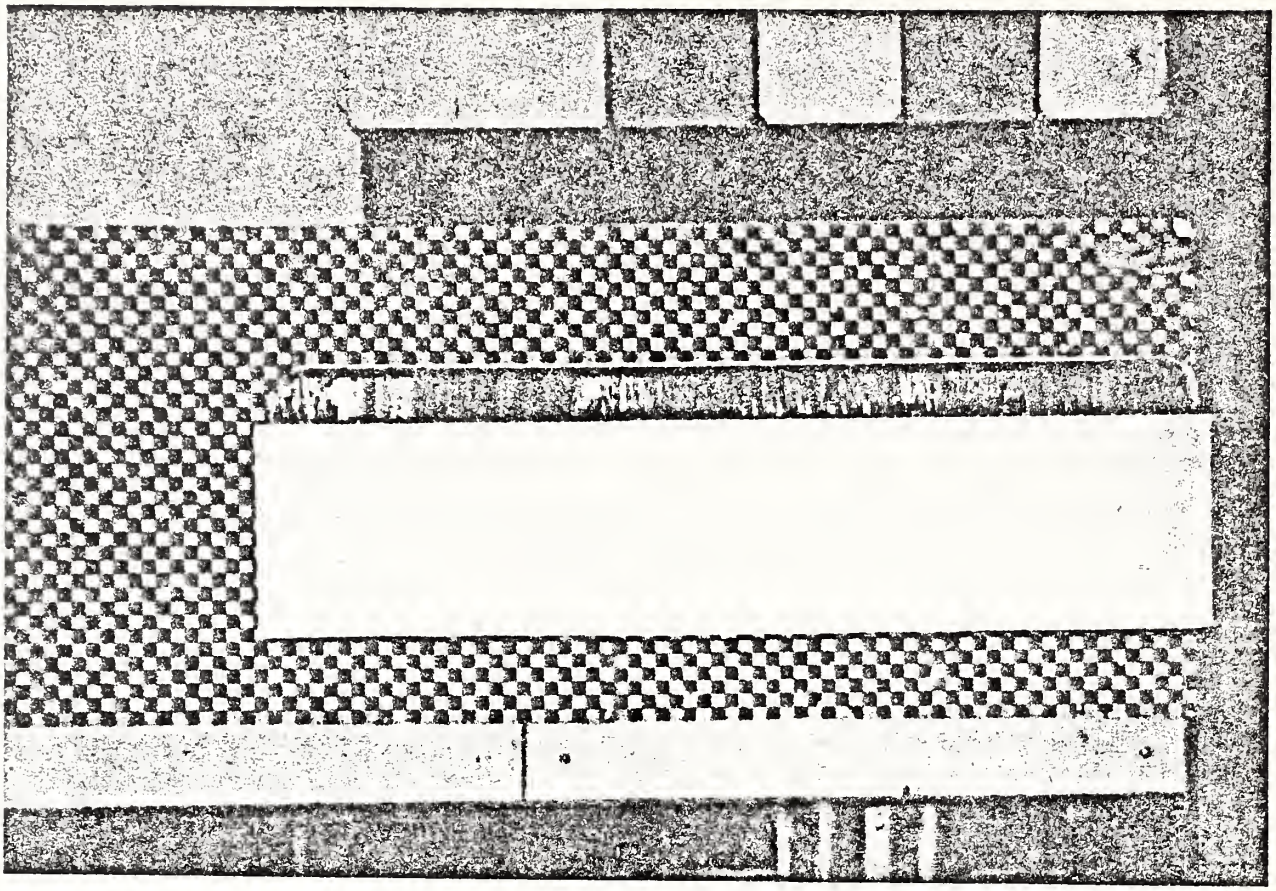


Figure A-21. PRE-TEST MDB FACE - VIEW 1

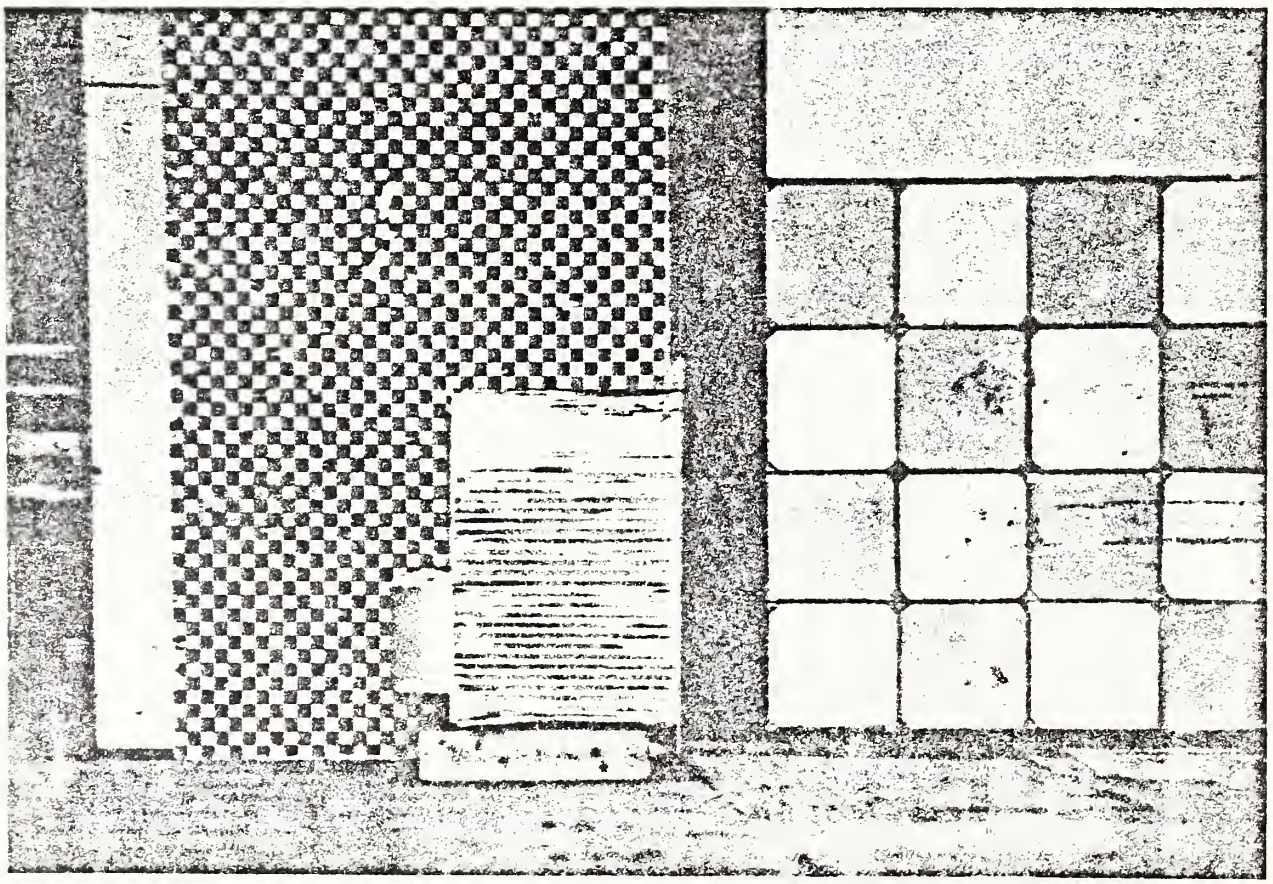


Figure A-22. PRE-TEST MDB FACE - VIEW 2

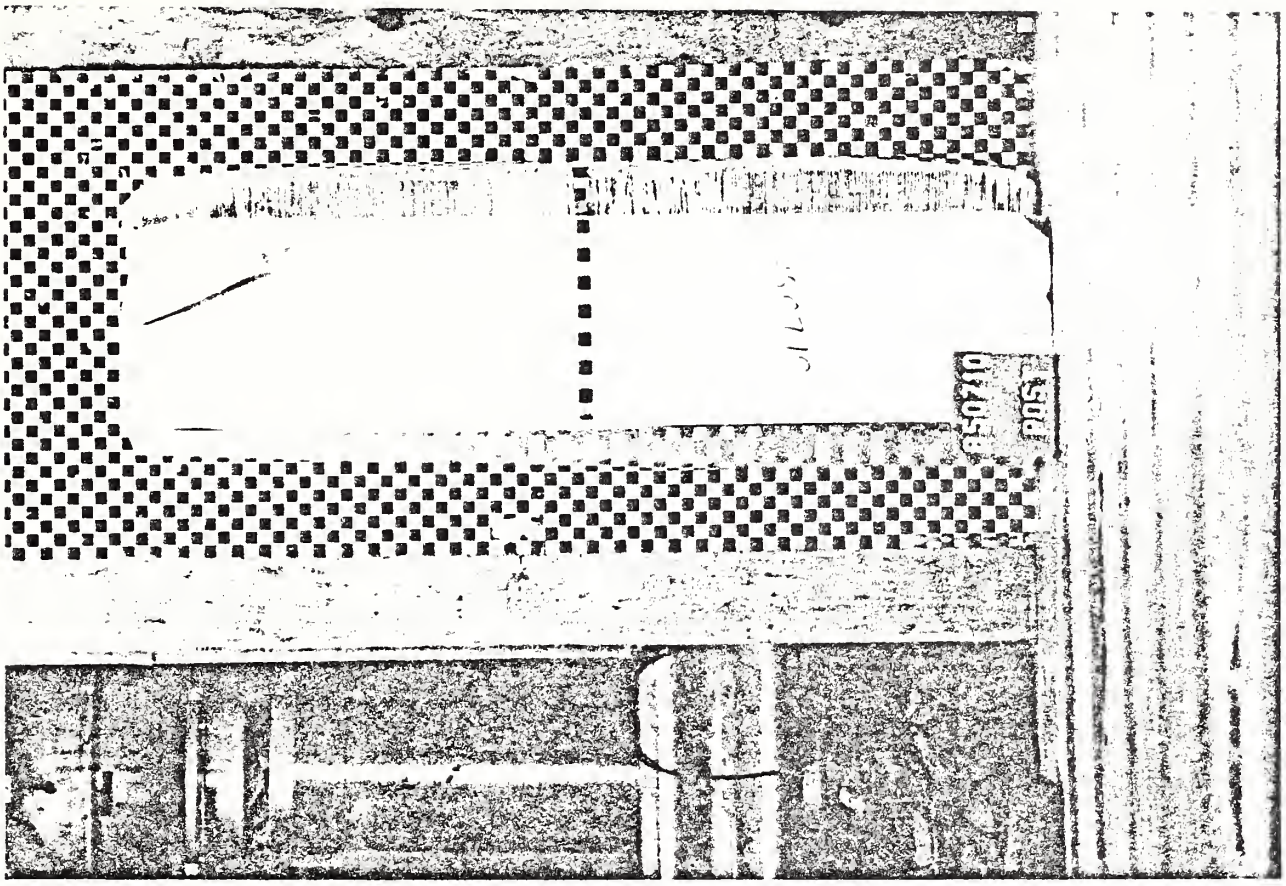


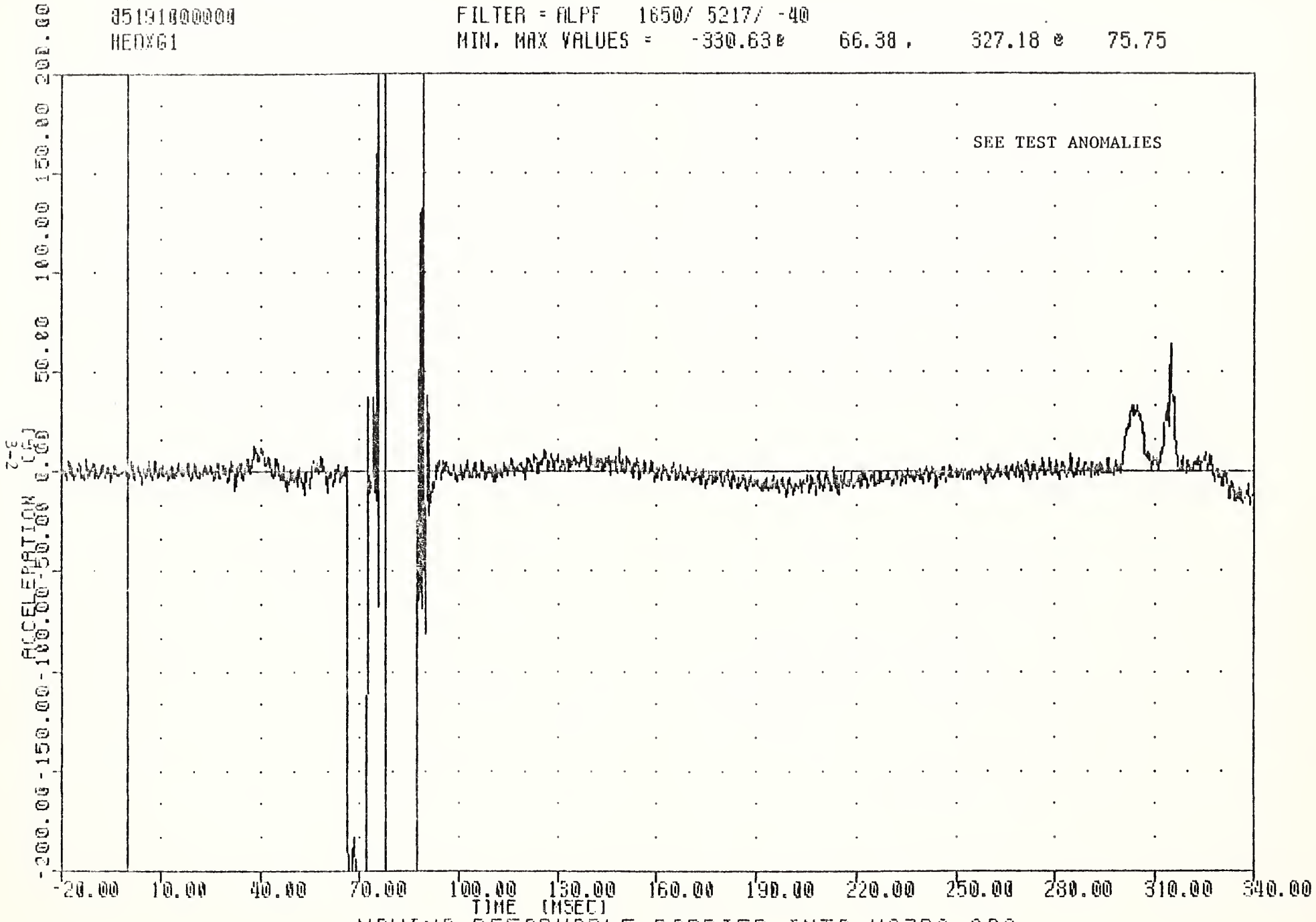
Figure A-23. POST-TEST MDB FACE - VIEW 1

Figure A-24. POST-TEST MDB FACE - VIEW 2

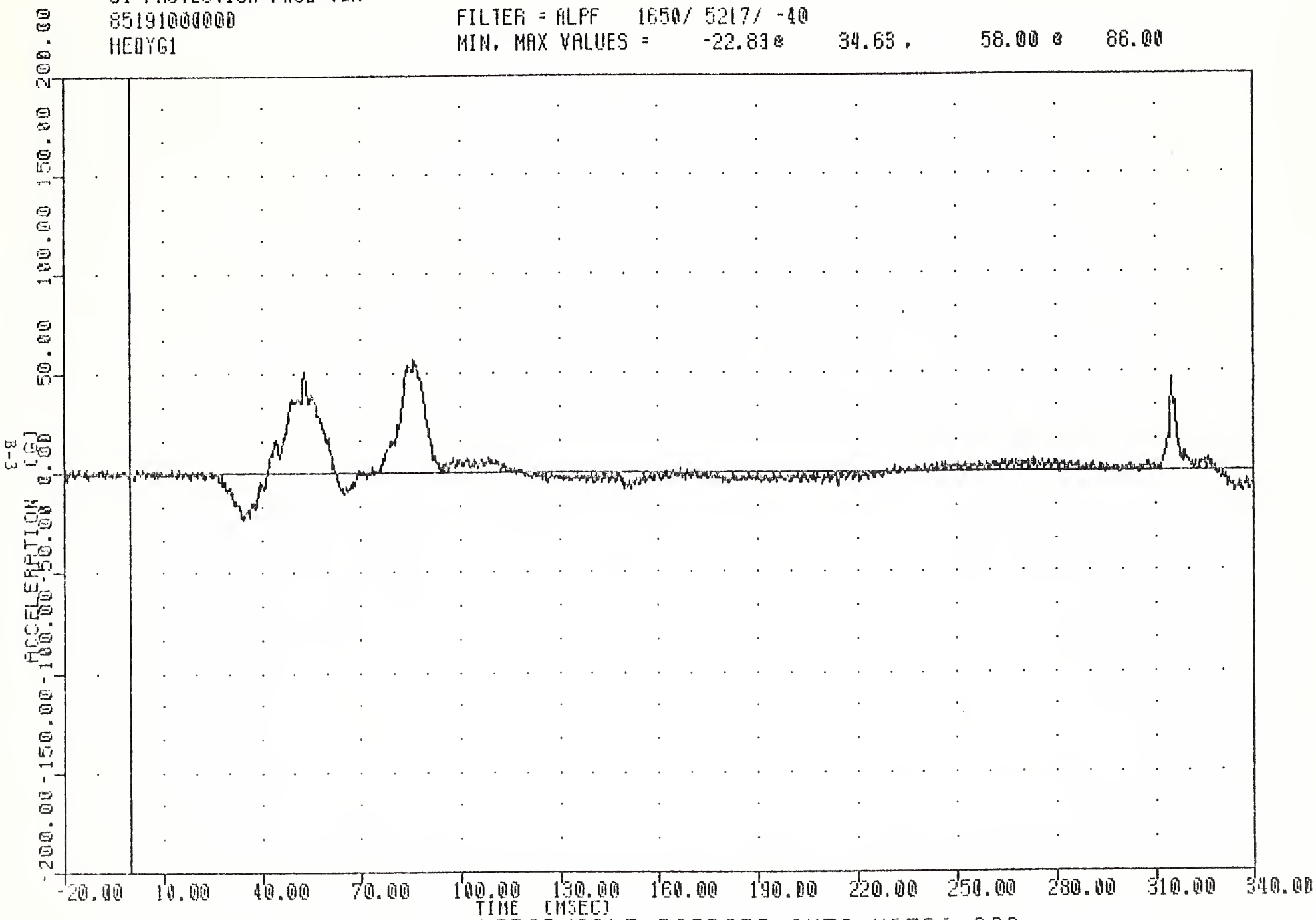
APPENDIX B

DATA PLOT PRESENTATION

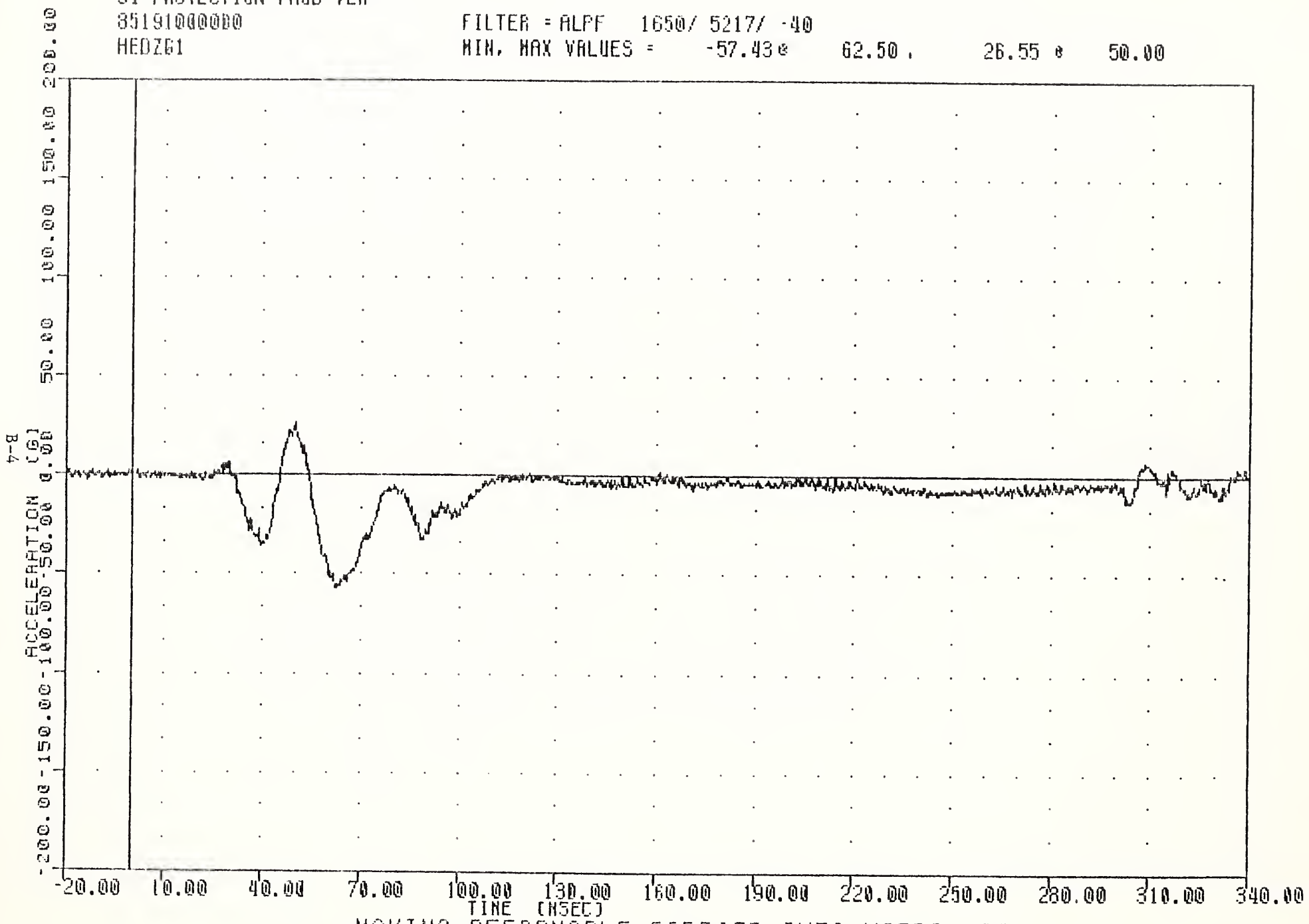
Data plots generated from the crash test data are presented on the following pages. All data are recorded on magnetic tape for inclusion in the NHTSA crash test data base system. All data were filtered according to SAE J211, except that dummy thorax data were filtered using the HSRI filter.



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER HEAD ACCELERATION X AXIS

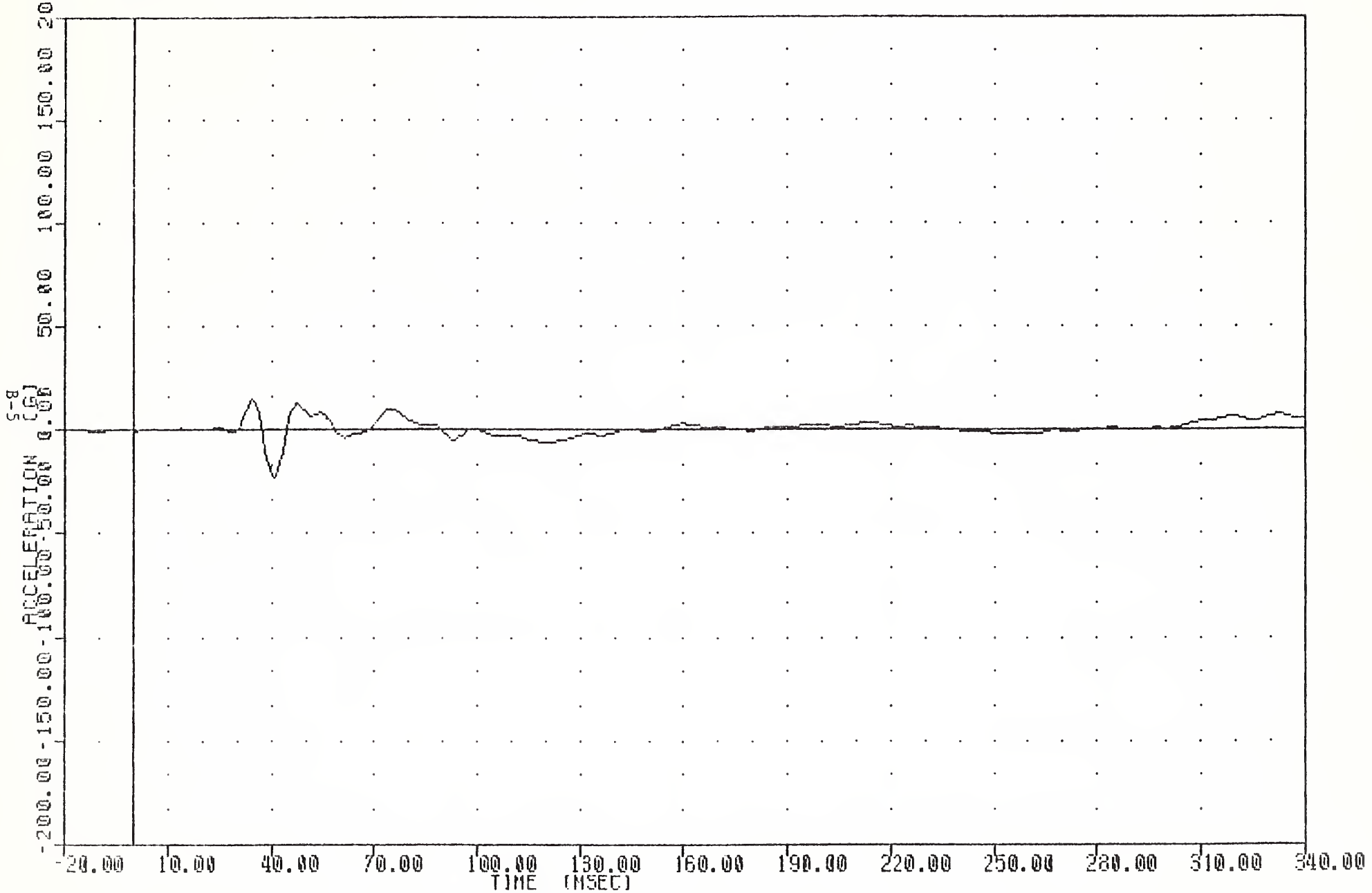


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER HEAD ACCELERATION Y AXIS



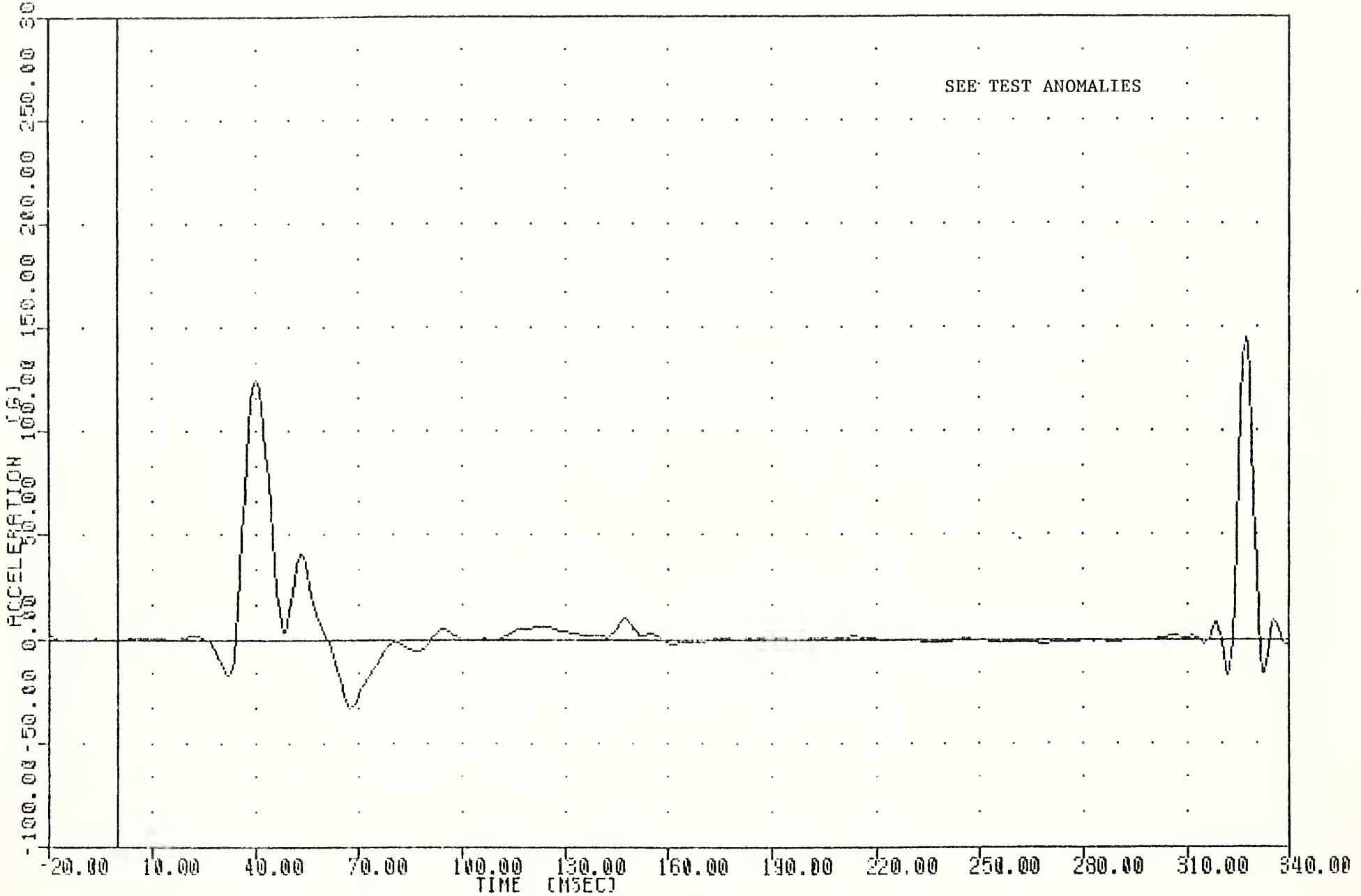
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER HEAD ACCELERATION Z AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
8519100000 FILTER = HSRI 136/ 189/ -50
T01X01 MIN, MAX VALUES = -22.70 @ 40.63 , 14.83 @ 34.38



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER UPPER SPINE ACCELERATION X AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
85191000000 FILTER = HSRI 136/ 189/ -50
T01YG1 MIN, MAX VALUES = -32.93@ 67.50 , 145.30 @ 326.88

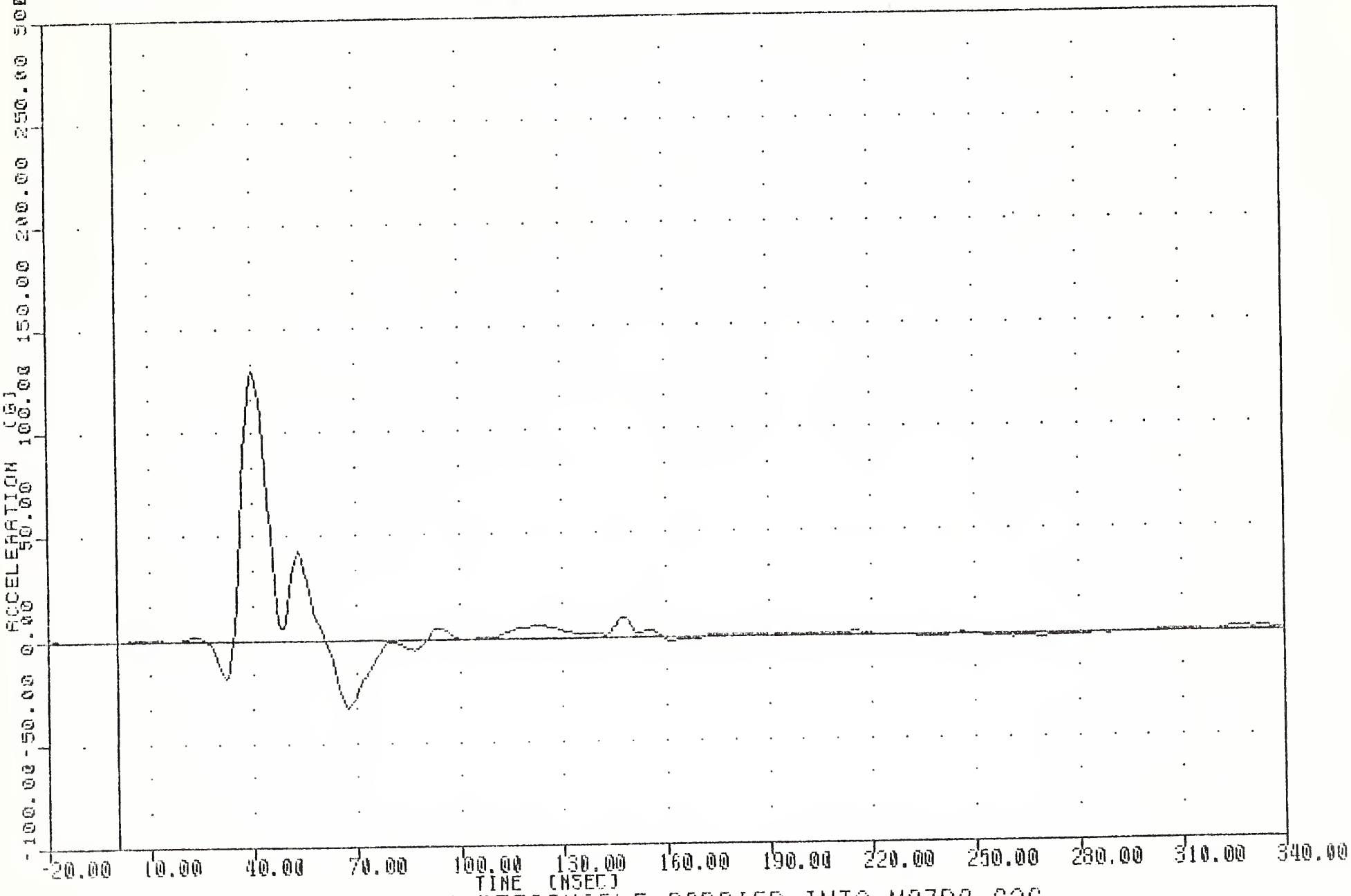


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER UPPER SPINE ACCELERATION Y AXIS

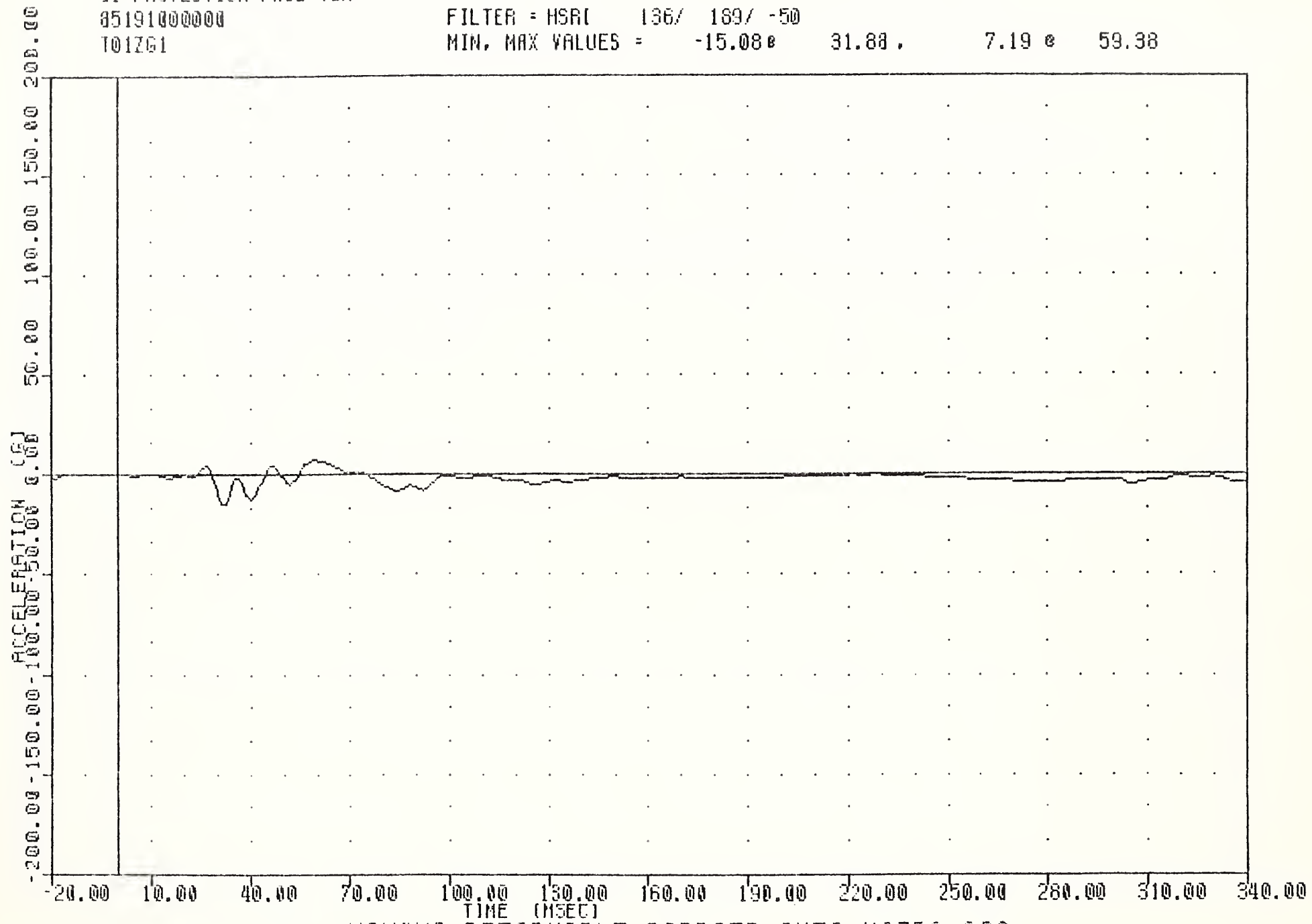
VAT , 850710
SI PROTECTION PROD VEH
85191000000
T01YGA

PLOT DATE 16-JUL-85 12:18:58

FILTER = HSRI 136/ 169/ -50
MIN, MAX VALUES = -32.91 @ 67.50 , 129.61 @ 40.00



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER UPPER SPINE ACCELERATION -2 Y AXIS

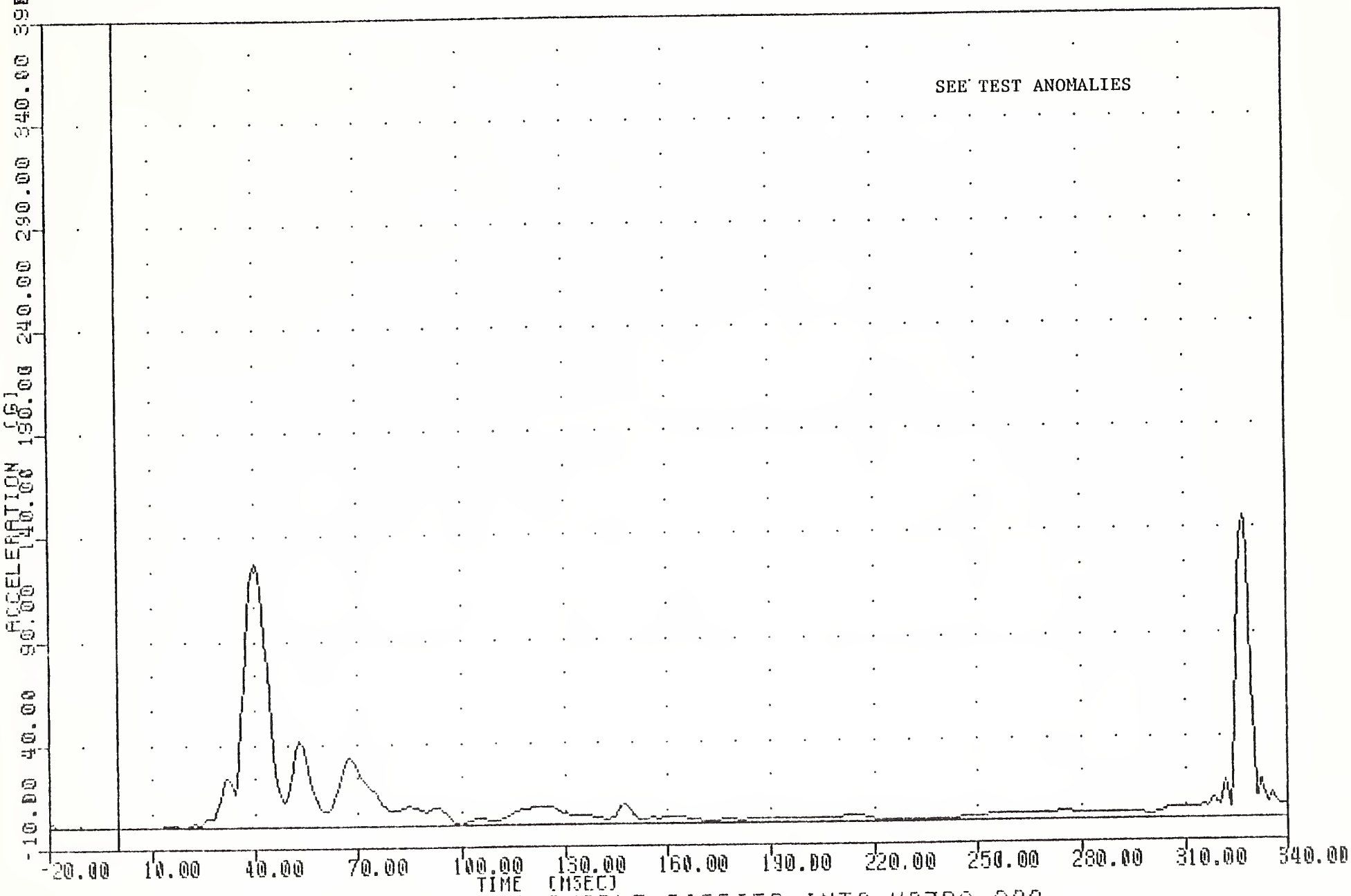


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER UPPER SPINE ACCELERATION Z AXIS

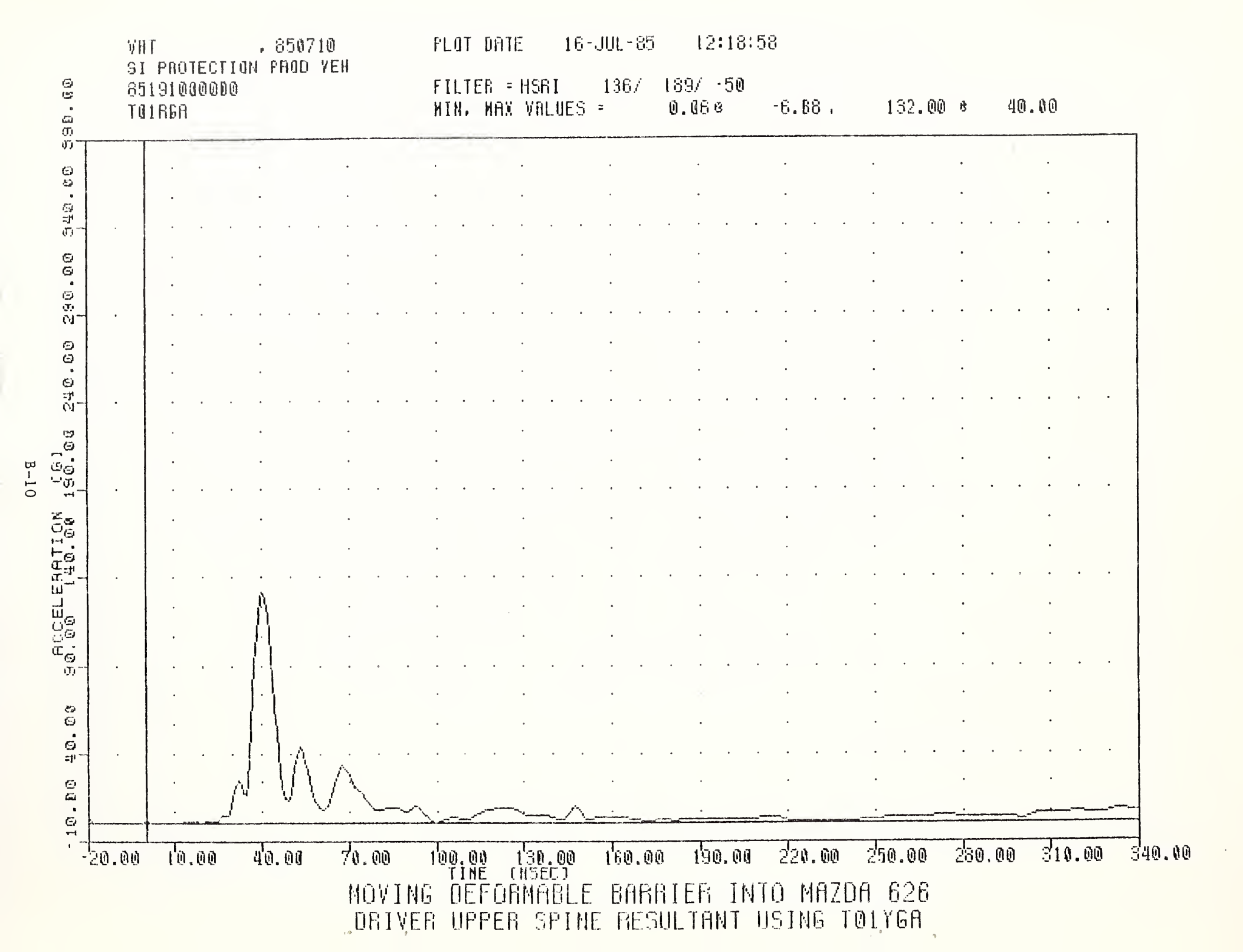
VRT , 850710
SI PROTECTION PROD VEH
8519100@000
T01RG1

PLOT DATE 16-JUL-85 12:18:58

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = 0.06@ -6.88, 145.40@ 326.88

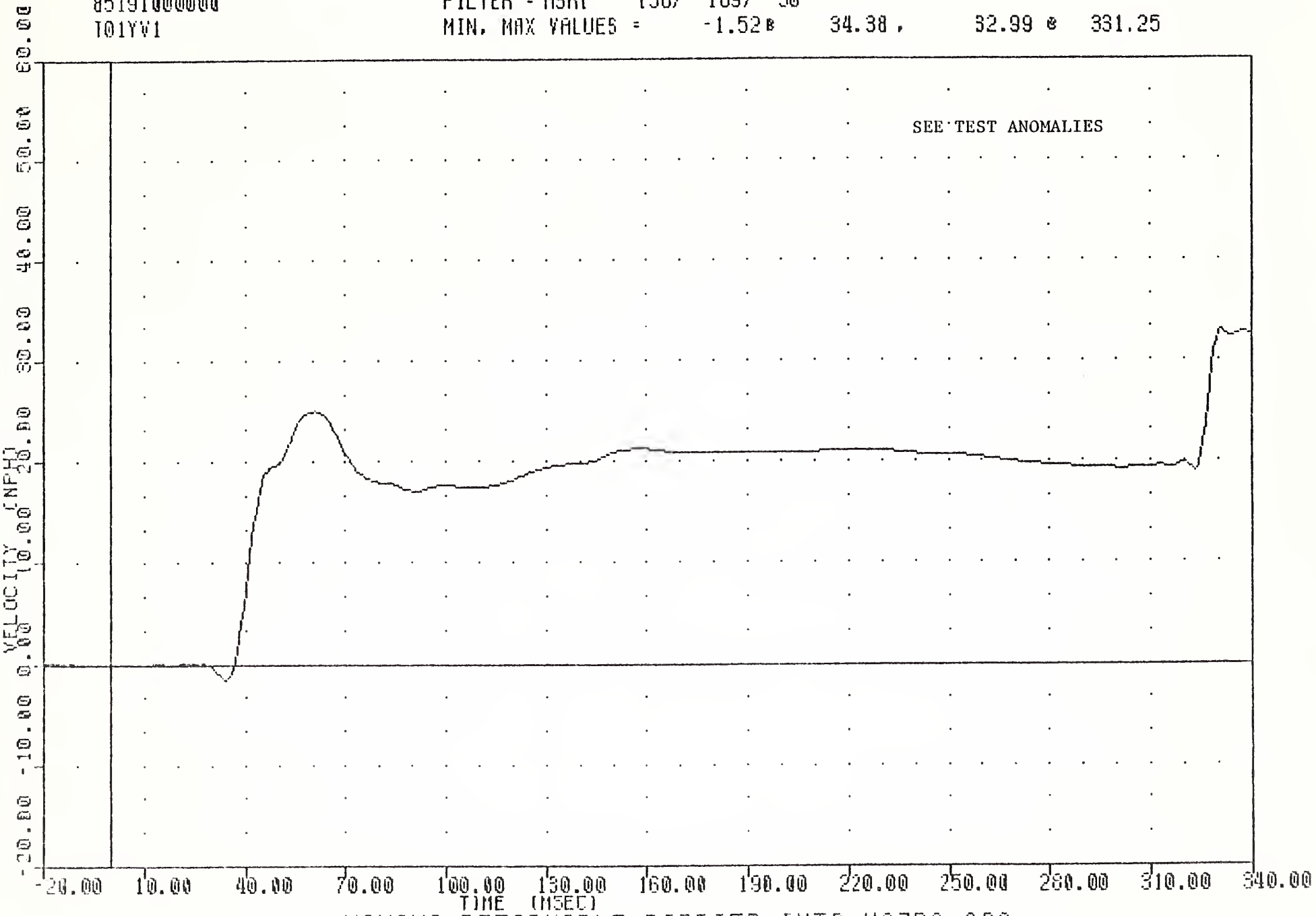


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER UPPER SPINE RESULTANT



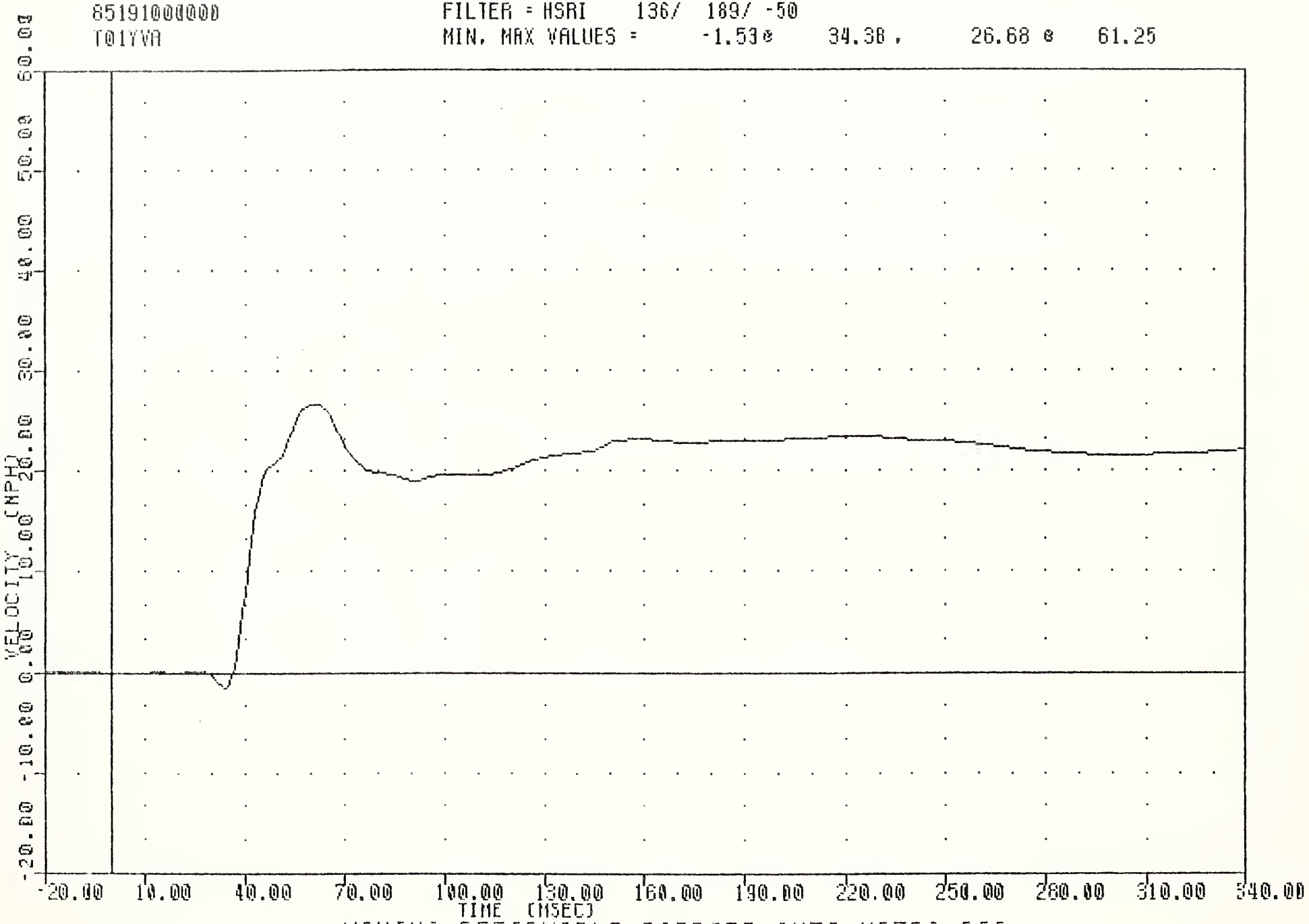
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER UPPER SPINE RESULTANT USING T01YGA

VRT , 850710 PLOT DATE 16-JUL-85 12:20:12
SI PROTECTION PROD VEH
85191000000 FILTER = HSRI 136/ 189/ -50
T01YV1 MIN, MAX VALUES = -1.52 @ 34.38 , 32.99 @ 331.25

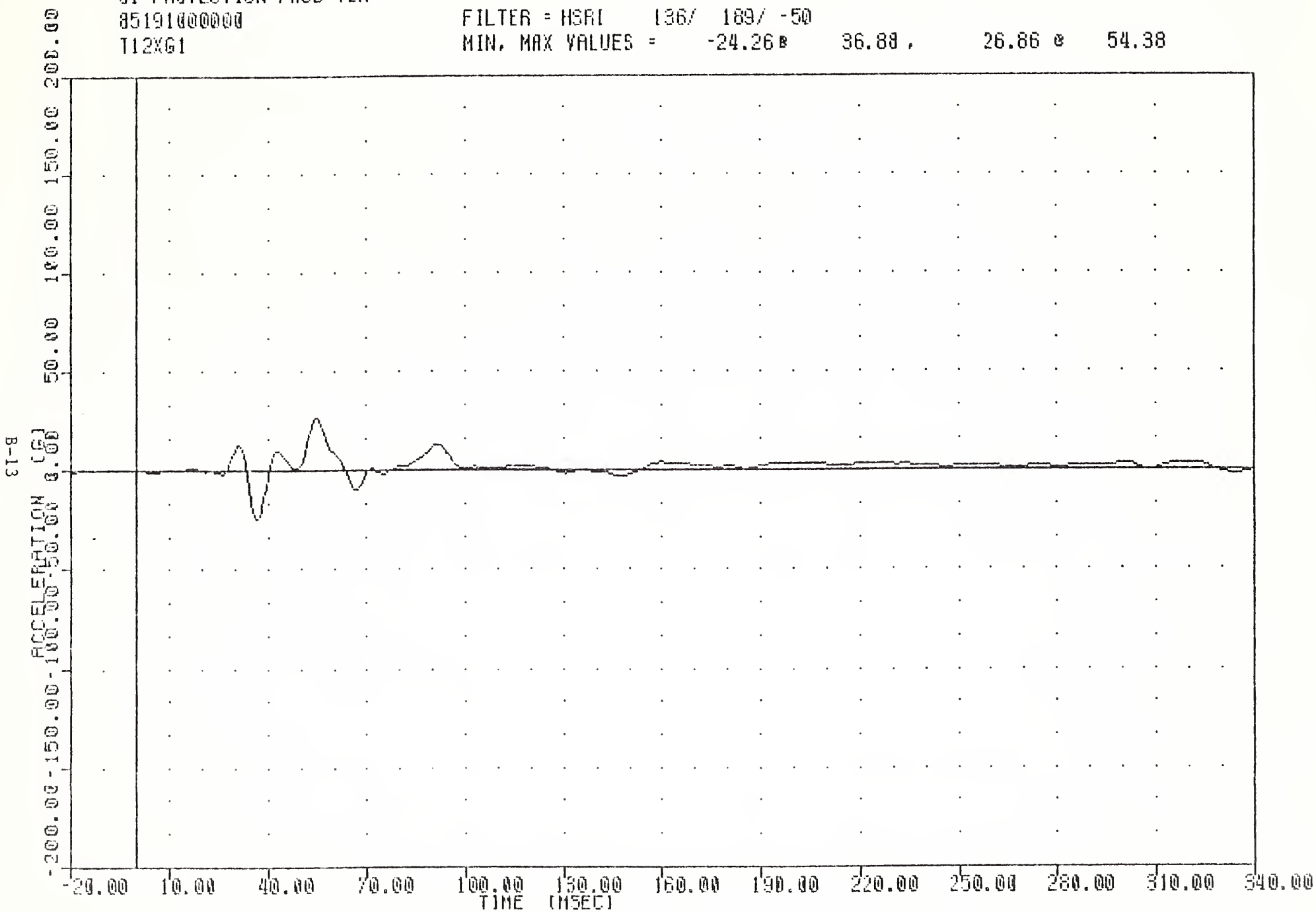


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING T01YG1

VRT , 850710 PLOT DATE 16-JUL-85 12:20:12
SI PROTECTION PROD VEH
85191000000 FILTER = HSRI 136/ 189/ -50
T01YVA MIN, MAX VALUES = -1.53 @ 34.38 , 26.68 @ 61.25

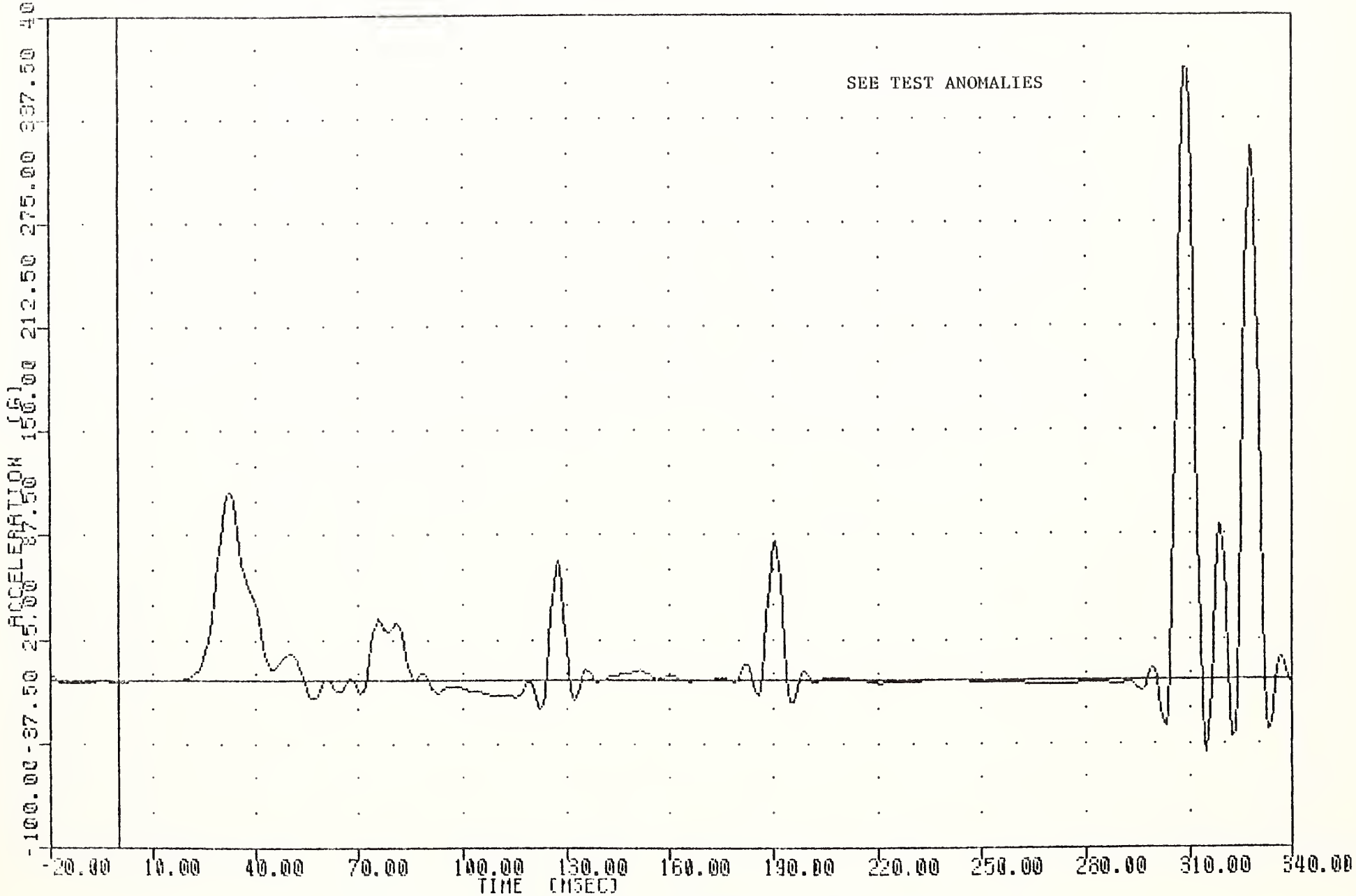


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING T01YGA

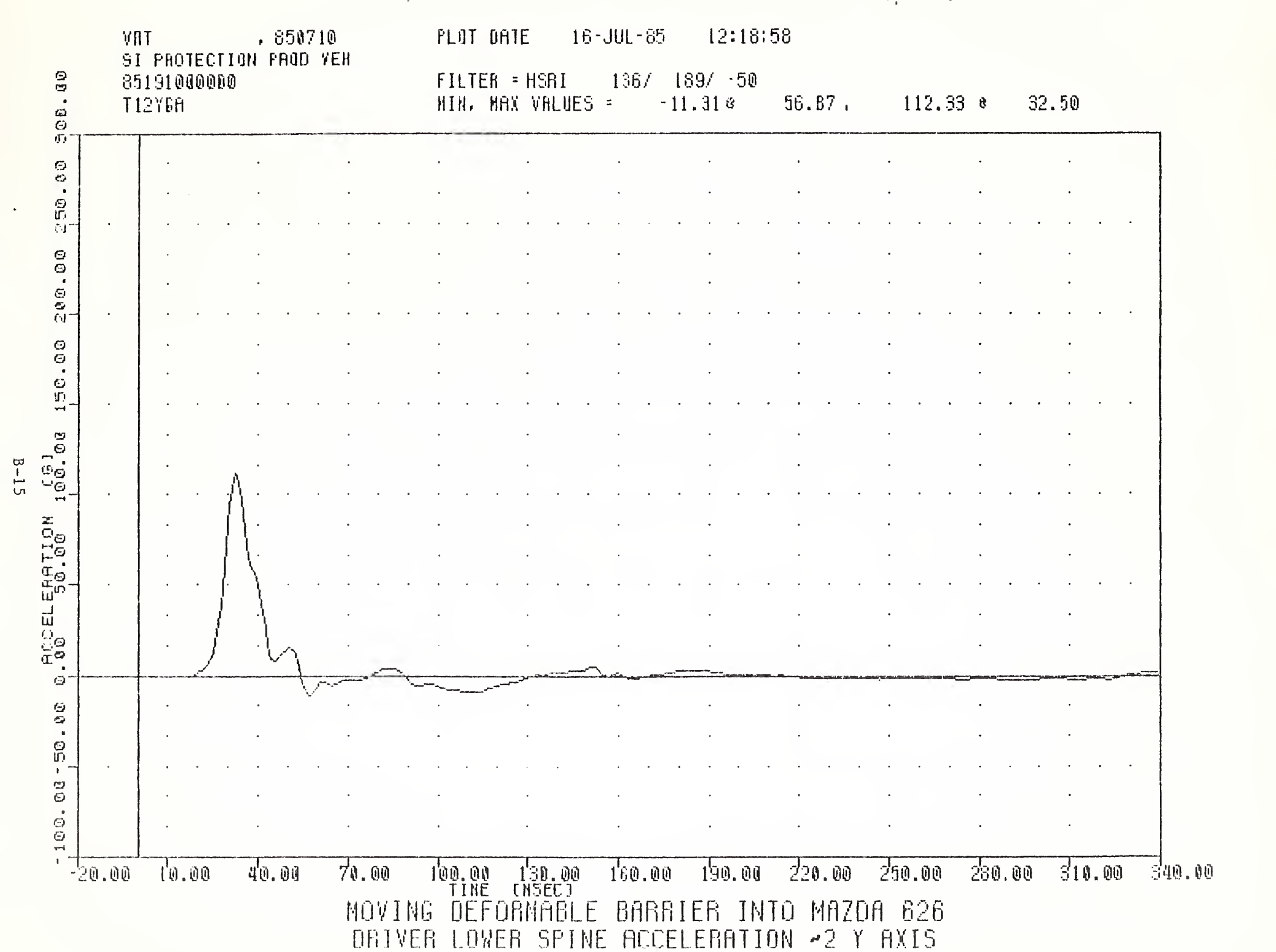


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER LOWER SPINE ACCELERATION X AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
85191000000 FILTER = HSRI 136/ 189/ -50
T12YG1 MIN, MAX VALUES = -42.98 @ 315.00 , 367.36 @ 308.75

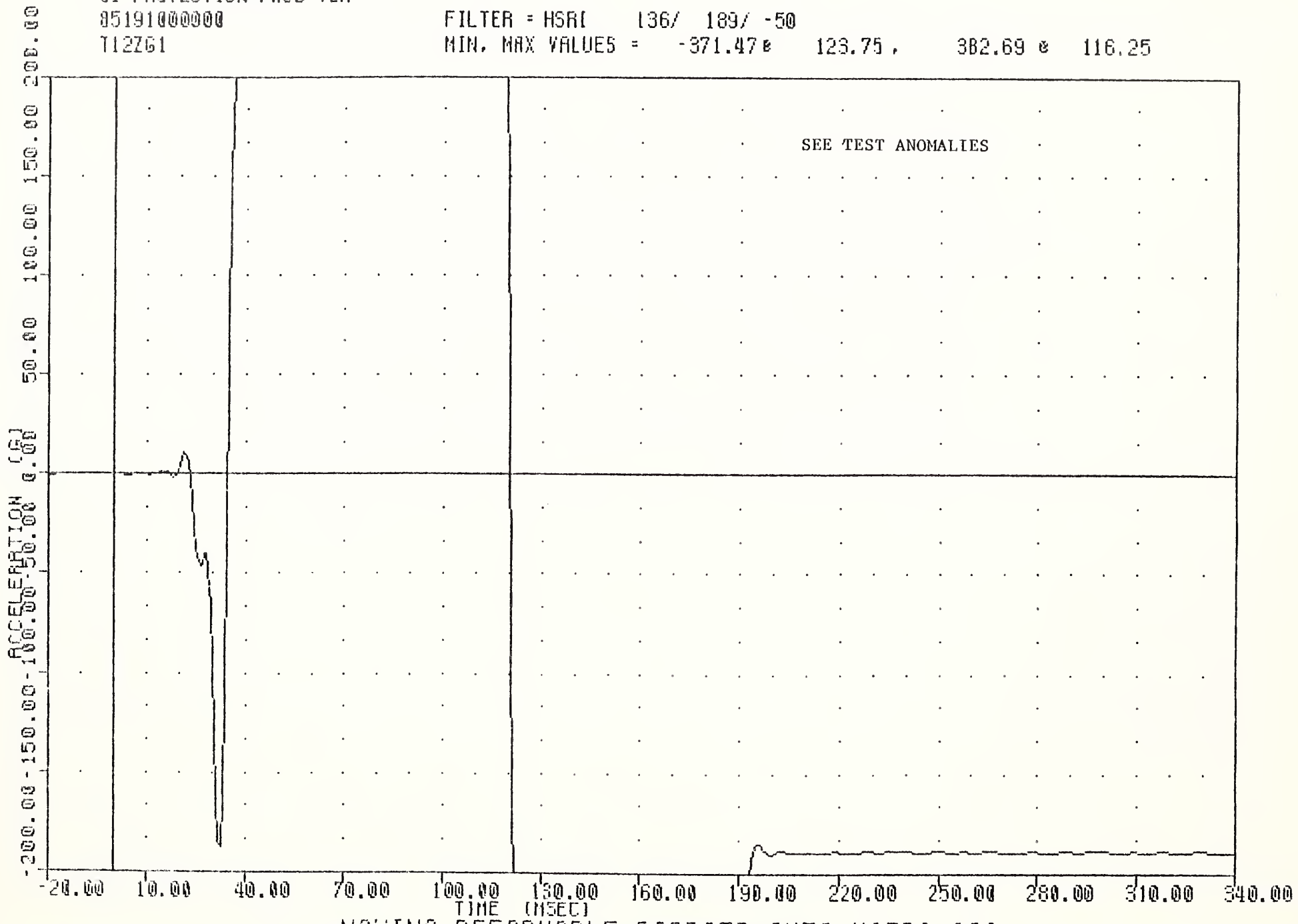


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER LOWER SPINE ACCELERATION Y AXIS

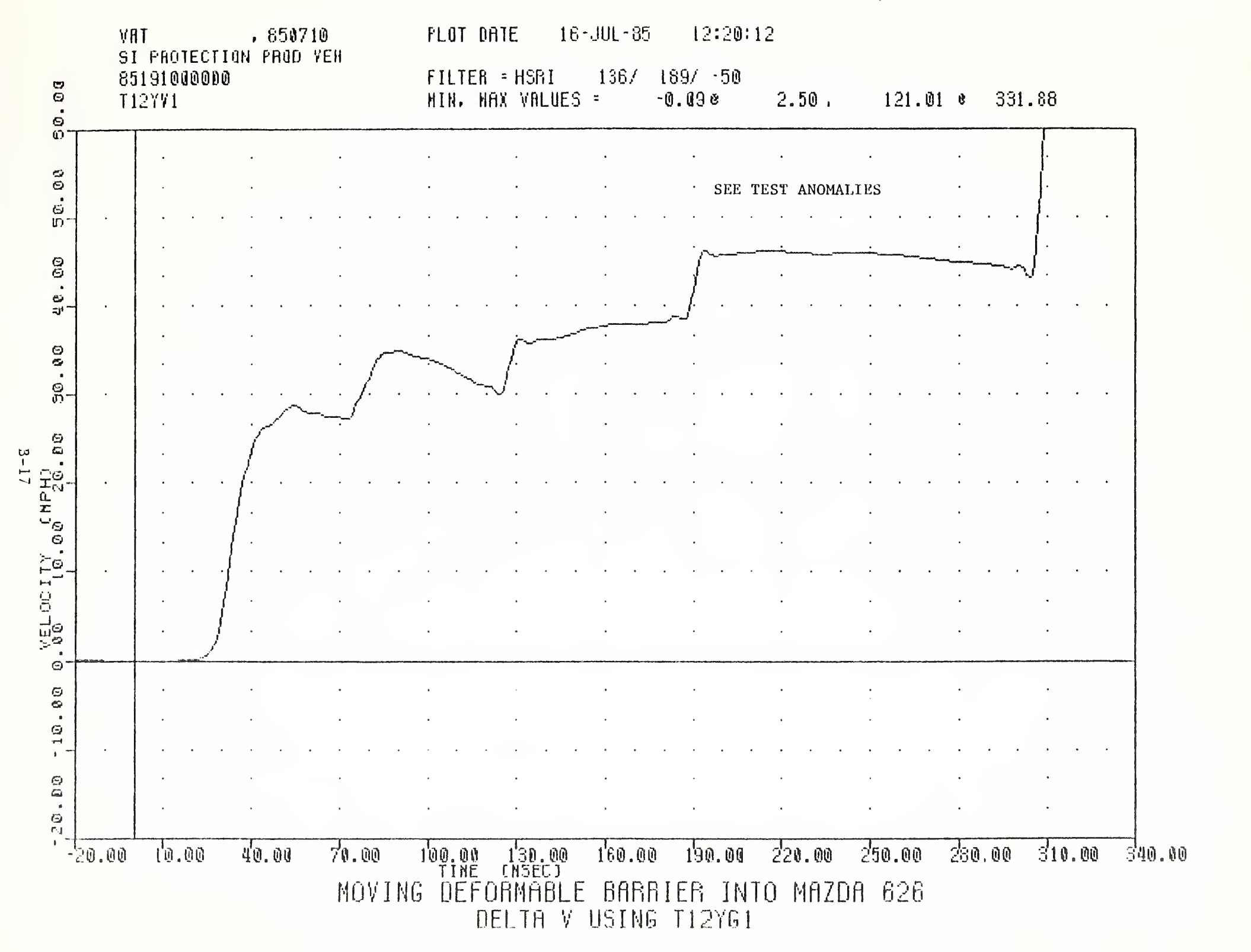


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER LOWER SPINE ACCELERATION -Z Y AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
85191000000 FILTER = HSRI 136/ 189/ -50
T12Z61 MIN, MAX VALUES = -371.47 @ 123.75 , 382.69 @ 116.25



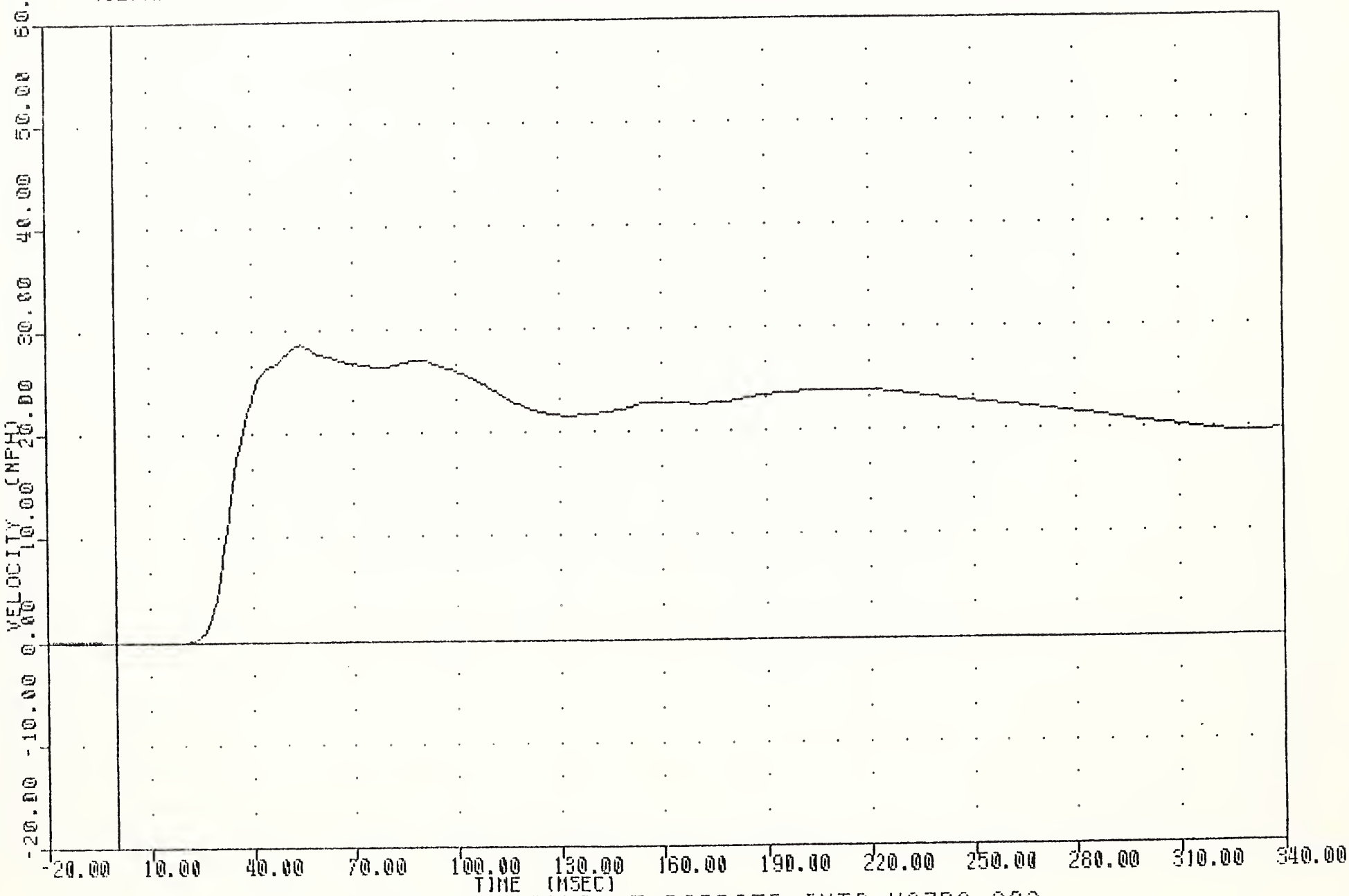
MOVING DEFORMABLE BARRIER INTO MAZDA 626
- DRIVER LOWER SPINE ACCELERATION Z AXIS



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING T12YG1

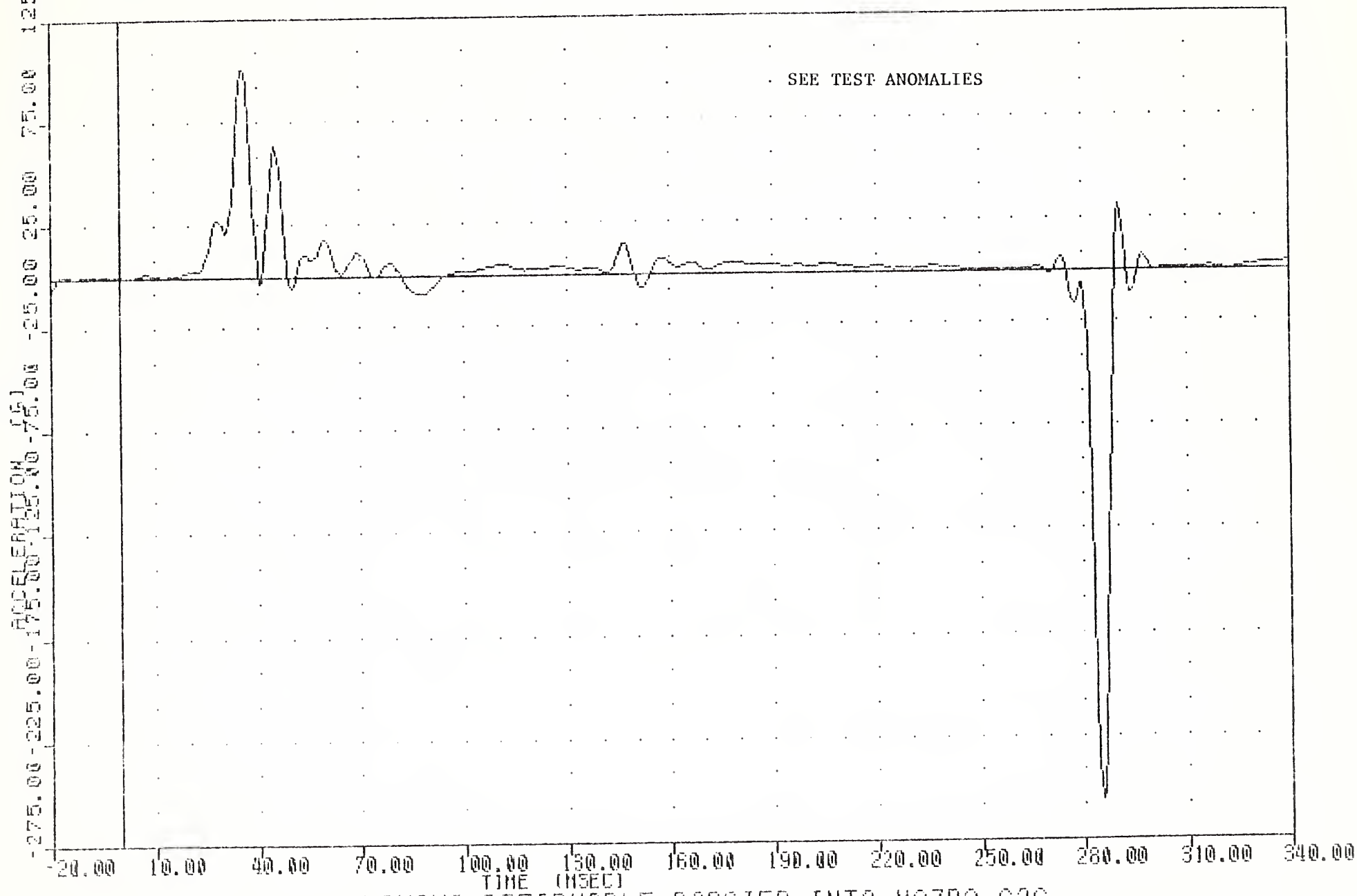
VRT , 850710 PLOT DATE 16-JUL-85 12:20:12
SI PROTECTION PROD VEH
85191000000
T12YVA

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -0.09 @ 18.13 , 28.66 @ 54.38

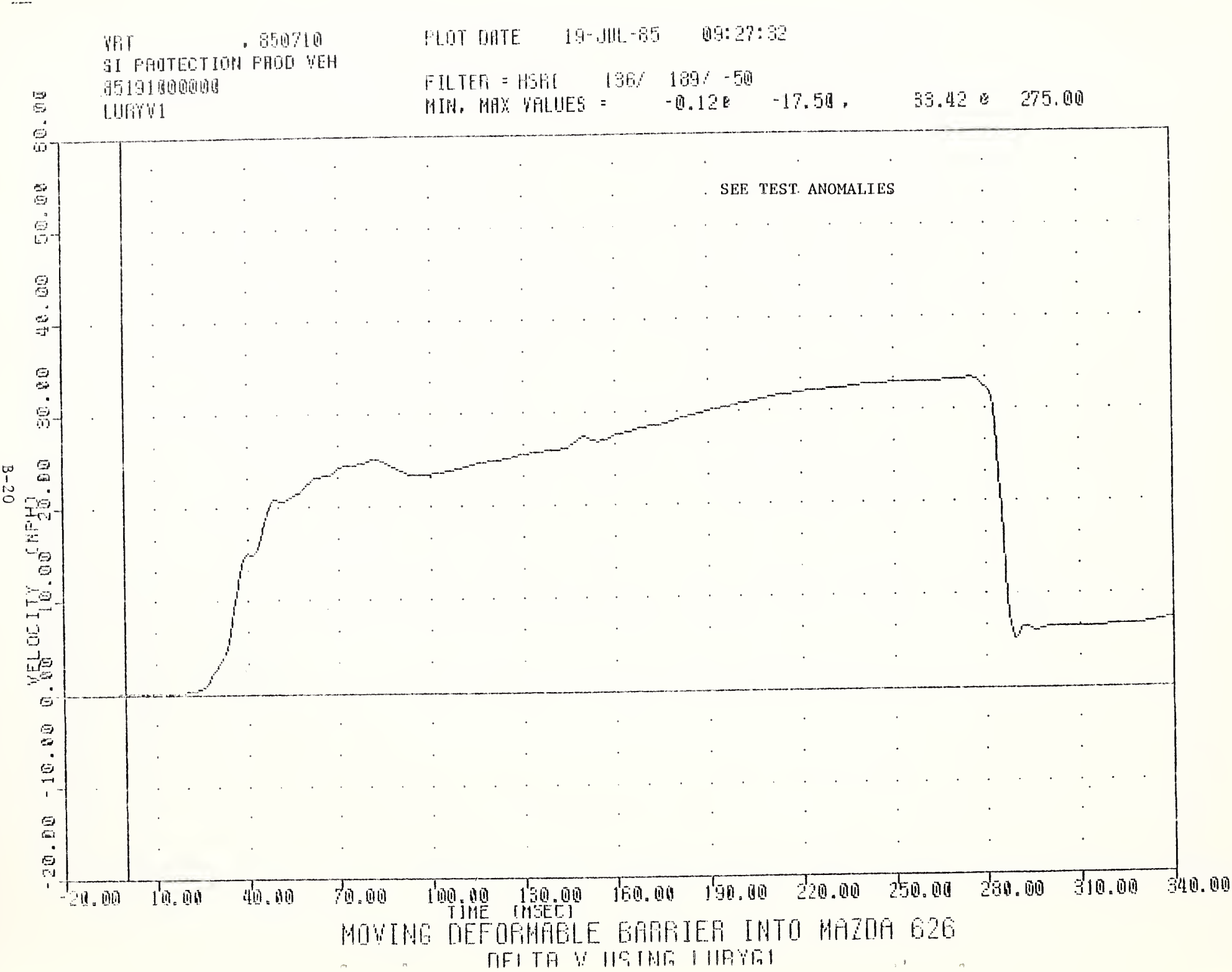


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING T12YGA

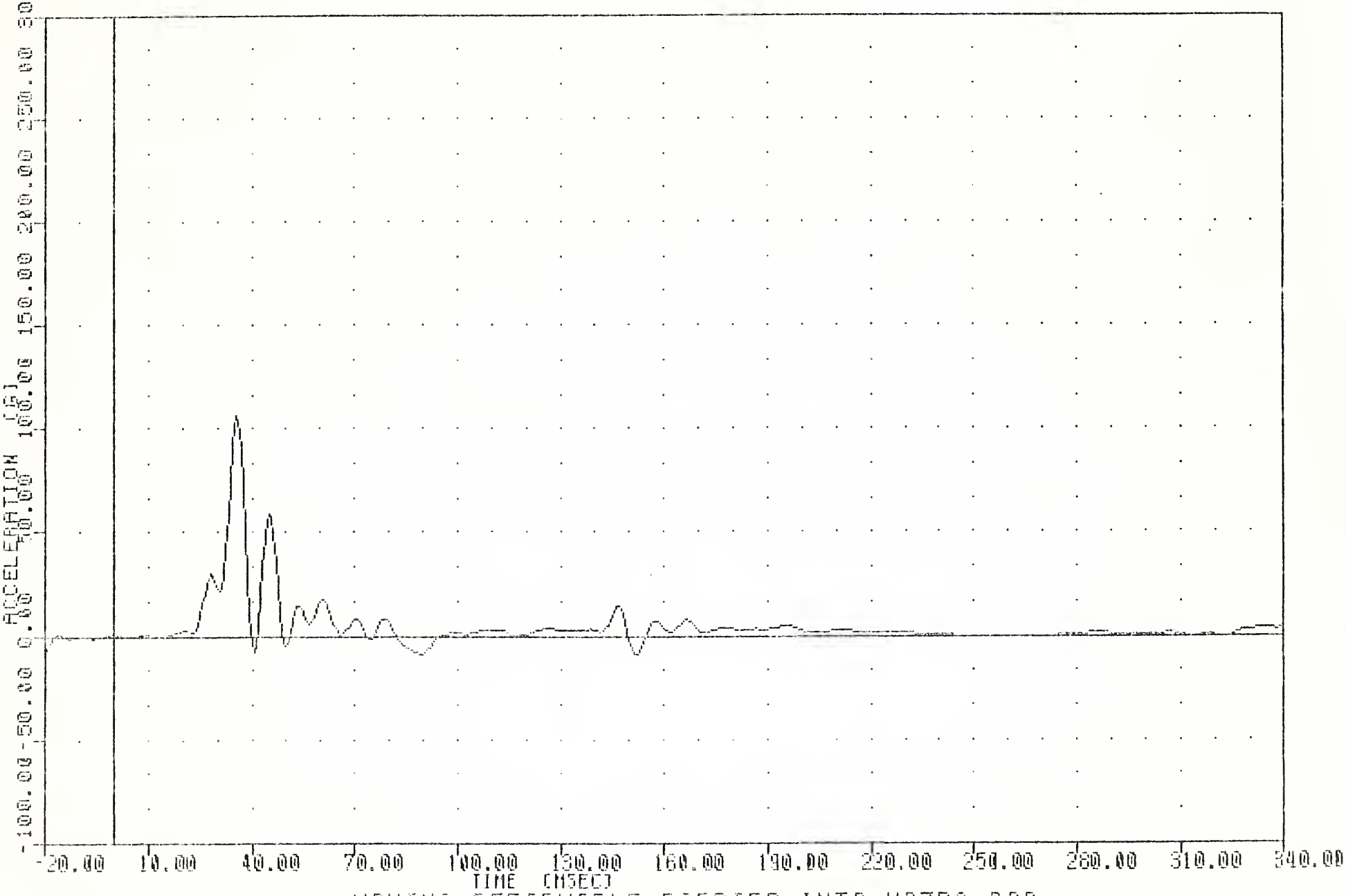
VRT , 850710 PLOT DATE 19-JUL-85 13:51:10
SI PROTECTION PROD VEH
851910@0000
LURYG1
FILTER = MSRI 136/ 189/ -50
MIN, MAX VALUES = -256.44@ 285.00 , 100.39 @ 35.69



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER LEFT UPPER RIB ACCELERATION Y AXIS

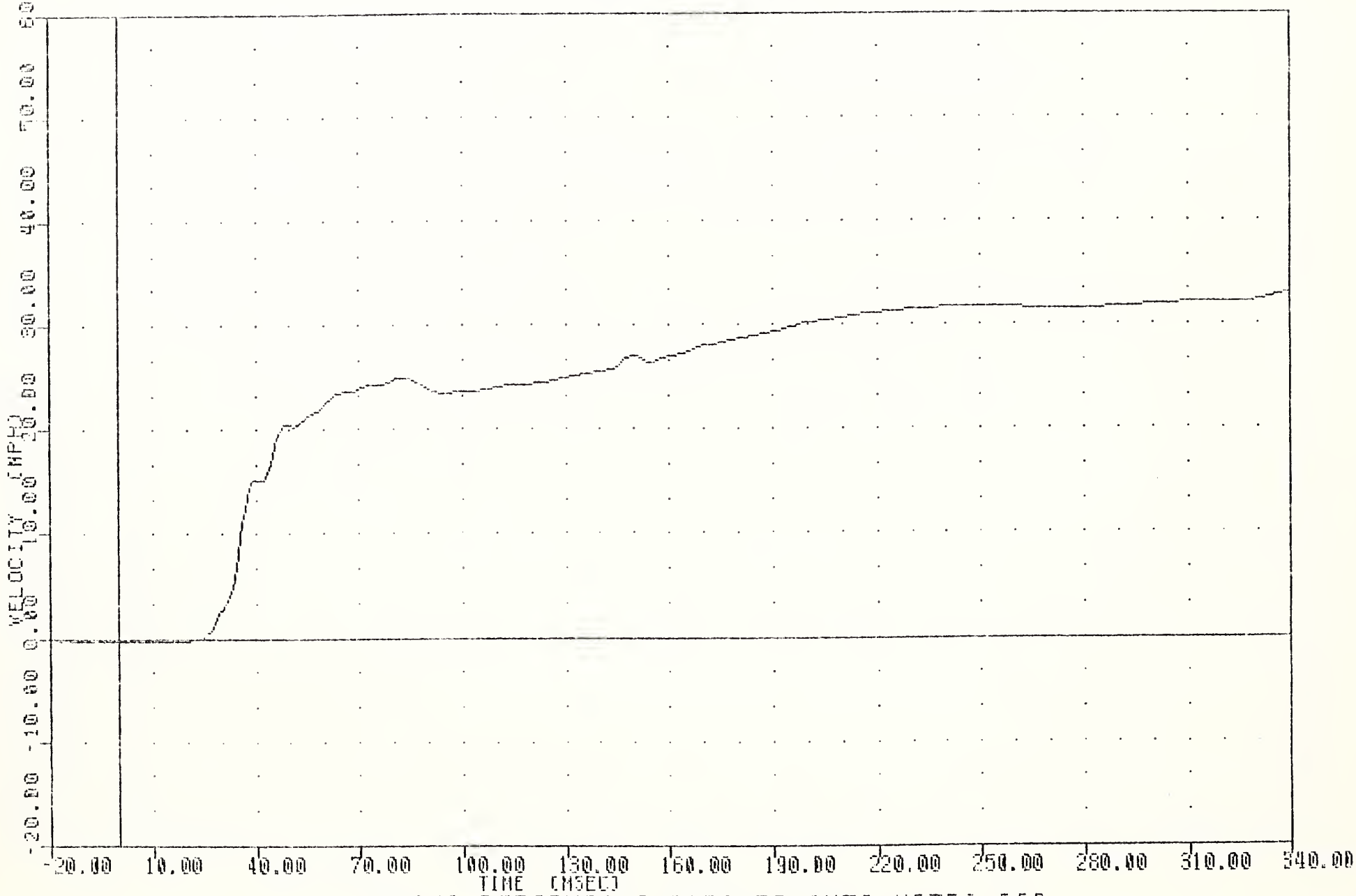

VRT , 850710
SI PROTECTION PROD VEH
85191@@@@@@
LURYV1
PLOT DATE 19-JUL-85 09:27:32
FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -0.12@ -17.50 , 33.42 @ 275.00
SEE TEST ANOMALIES
VELOCITY (MPH)
60.00
50.00
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-20.00
10.00
40.00
70.00
100.00
130.00
160.00
190.00
220.00
250.00
280.00
310.00
340.00
TIME (MSEC)
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LURYG1

VRT , 850710 PLOT DATE 19-JUL-85 13:51:10
SI PROTECTION PROD VEH
8519100@000 FILTER = HSRI 136/ 189/ -50
LURYGA MIN, MAX VALUES = -9.44@ 151.87 , 107.12 @ 35.63



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER LEFT UPPER RIB ACCELERATION -2 Y AXIS

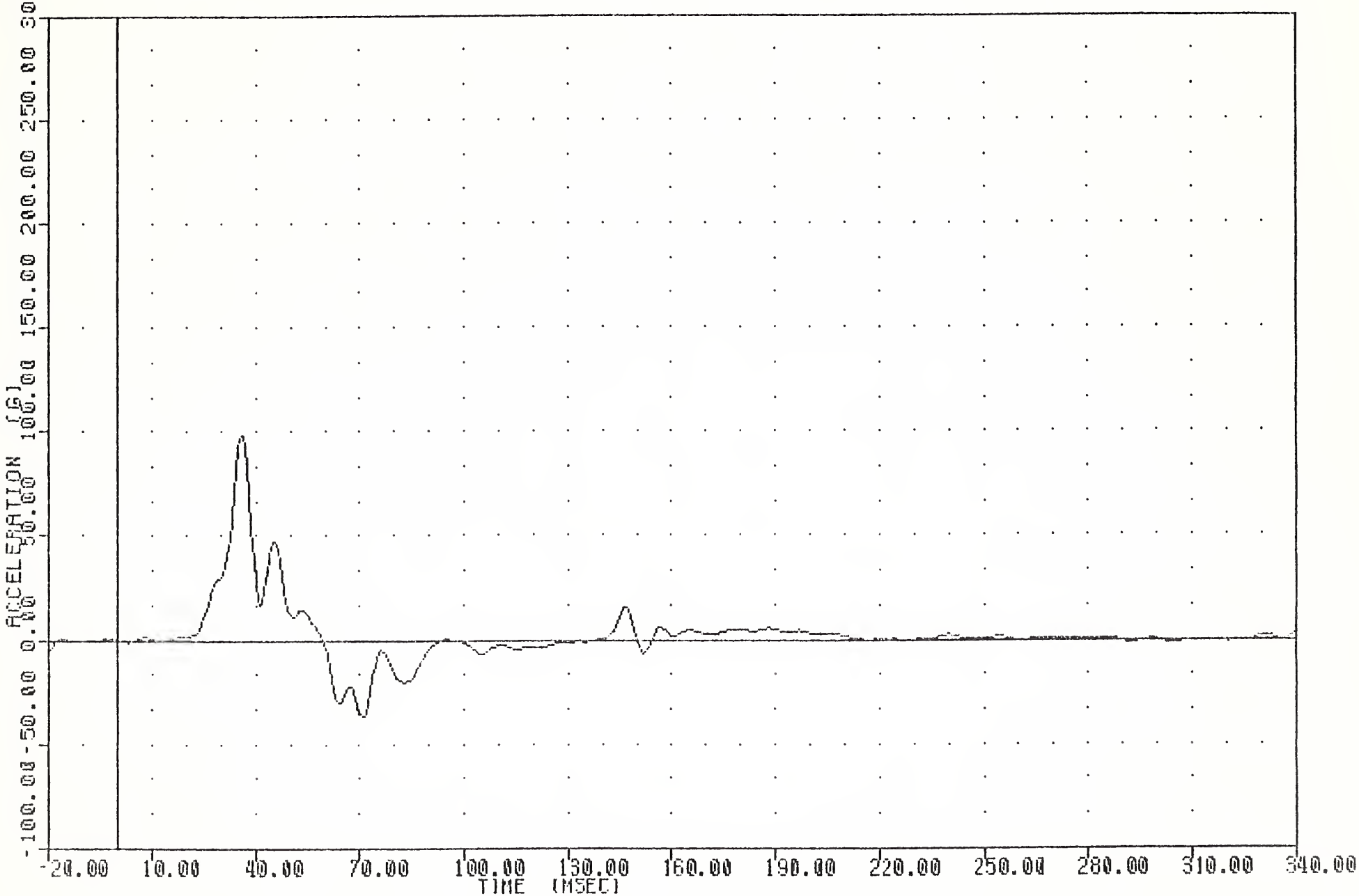
VRT , 850710 PLOT DATE 19-JUL-85 09:27:32
SI PROTECTION PROD VEH
85191000000 FILTER = HSAI 136/ 189/ -50
LDAYVA MIN, MAX VALUES = -0.40 @ -2.50 , 33.05 @ 340.00



MOVING DEFORMABLE BARRIER INTO MAZDA 626

DELTA V USING LDAYGA

VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
85191000000 FILTER = NSRI 136/ 189/ -50
LLRYG1 MIN, MAX VALUES = -36.99 @ 70.63 , 97.84 @ 36.25

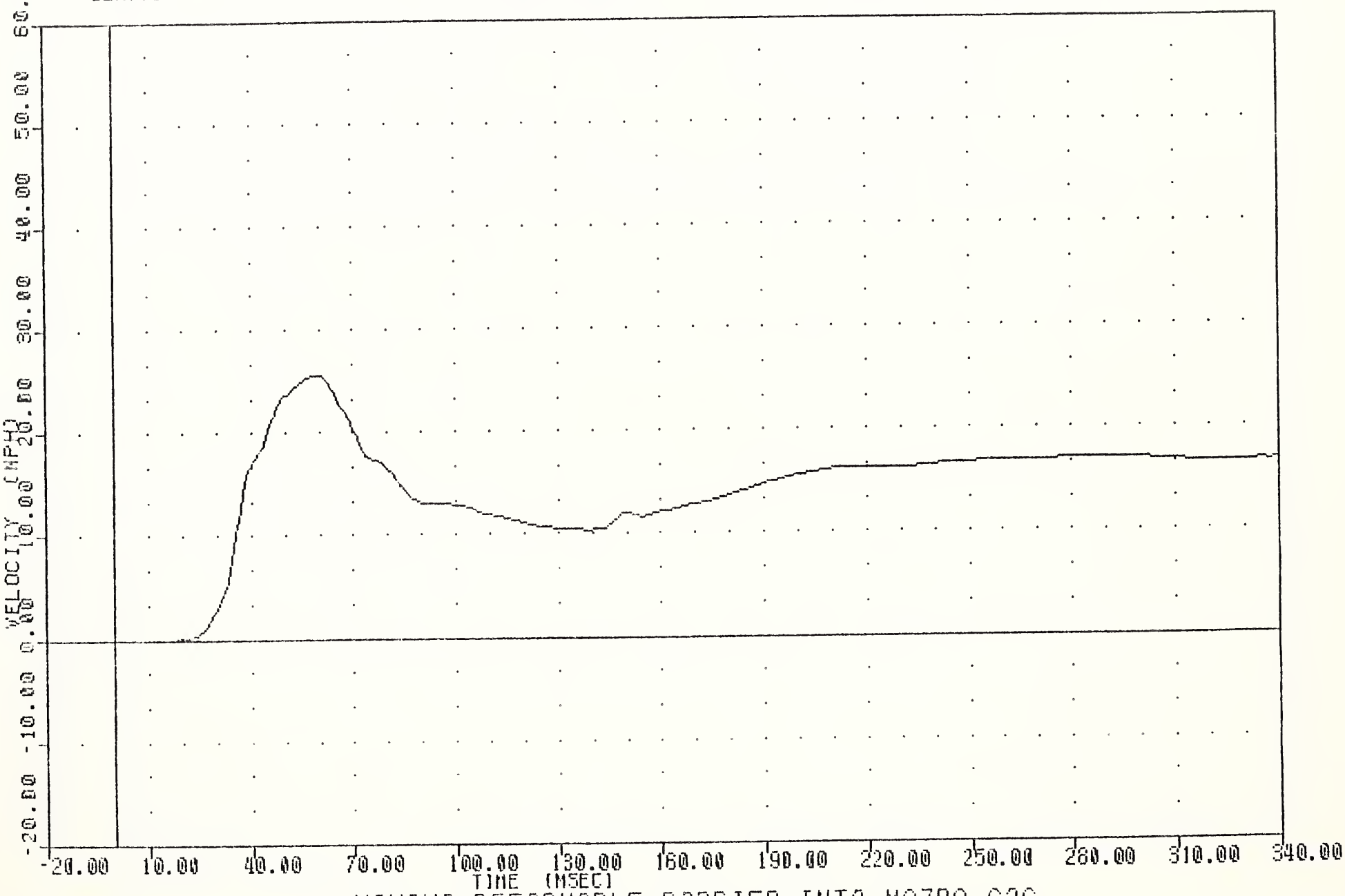


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER LEFT LOWER RIB ACCELERATION Y AXIS

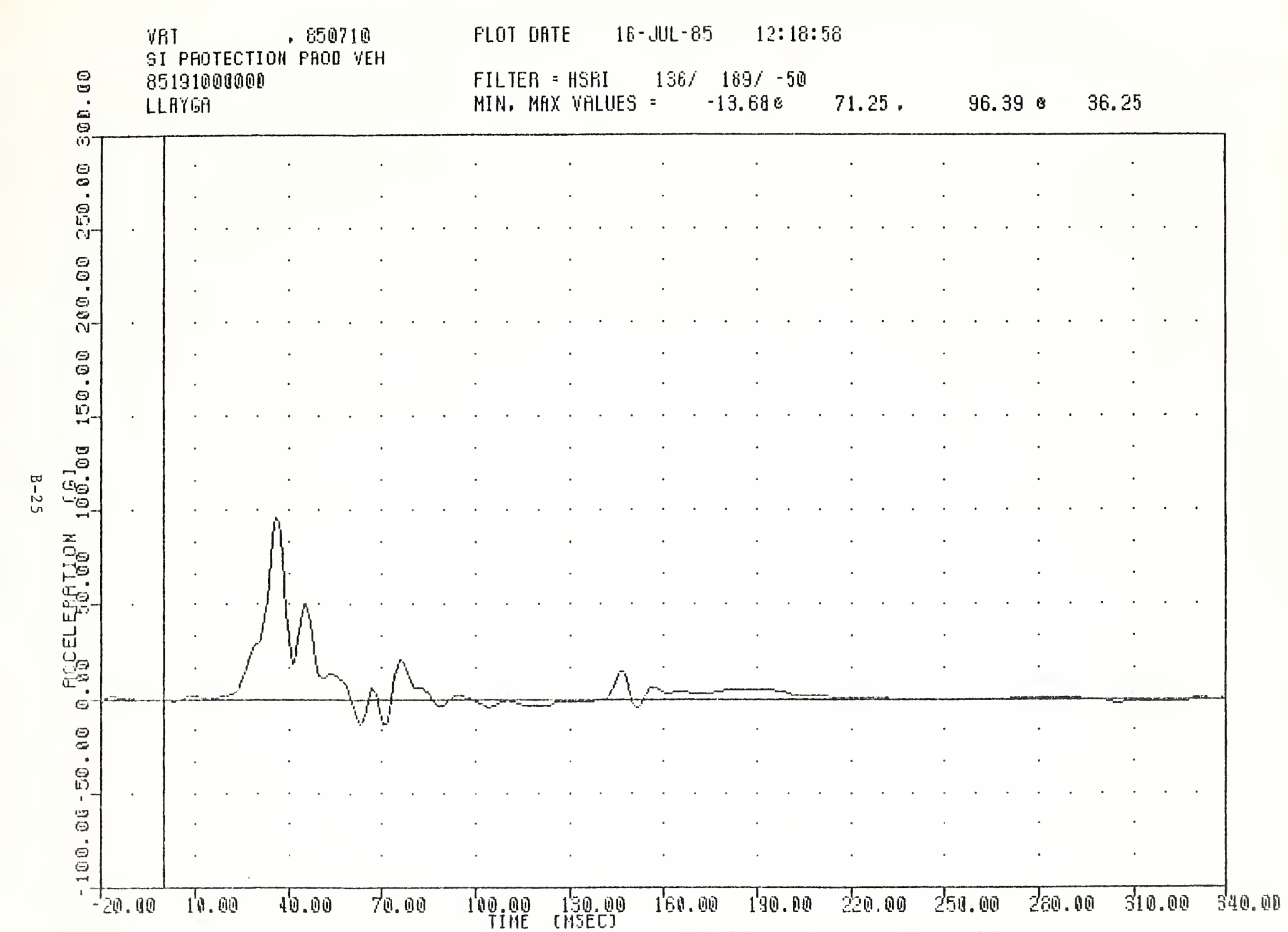
VRT . 850710
SI PROTECTION PROD VEH
85191000000
LLRYV1

PLOT DATE 16-JUL-85 12:20:12

FILTER = HSRI 136/ 189/ -50
MIN. MAX VALUES = -0.11 @ -18.13 , 25.58 @ 59.38

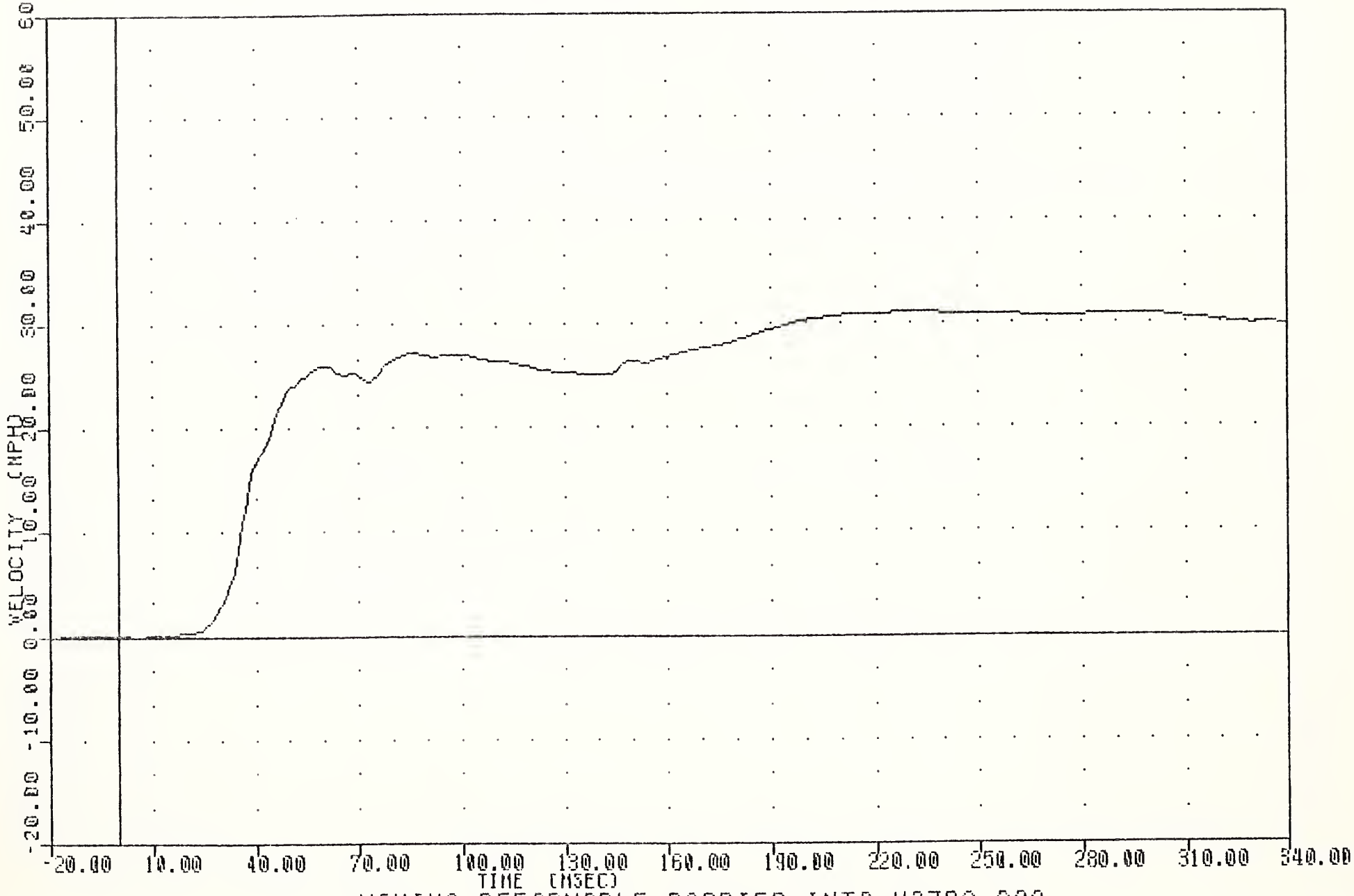


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LLRYG1



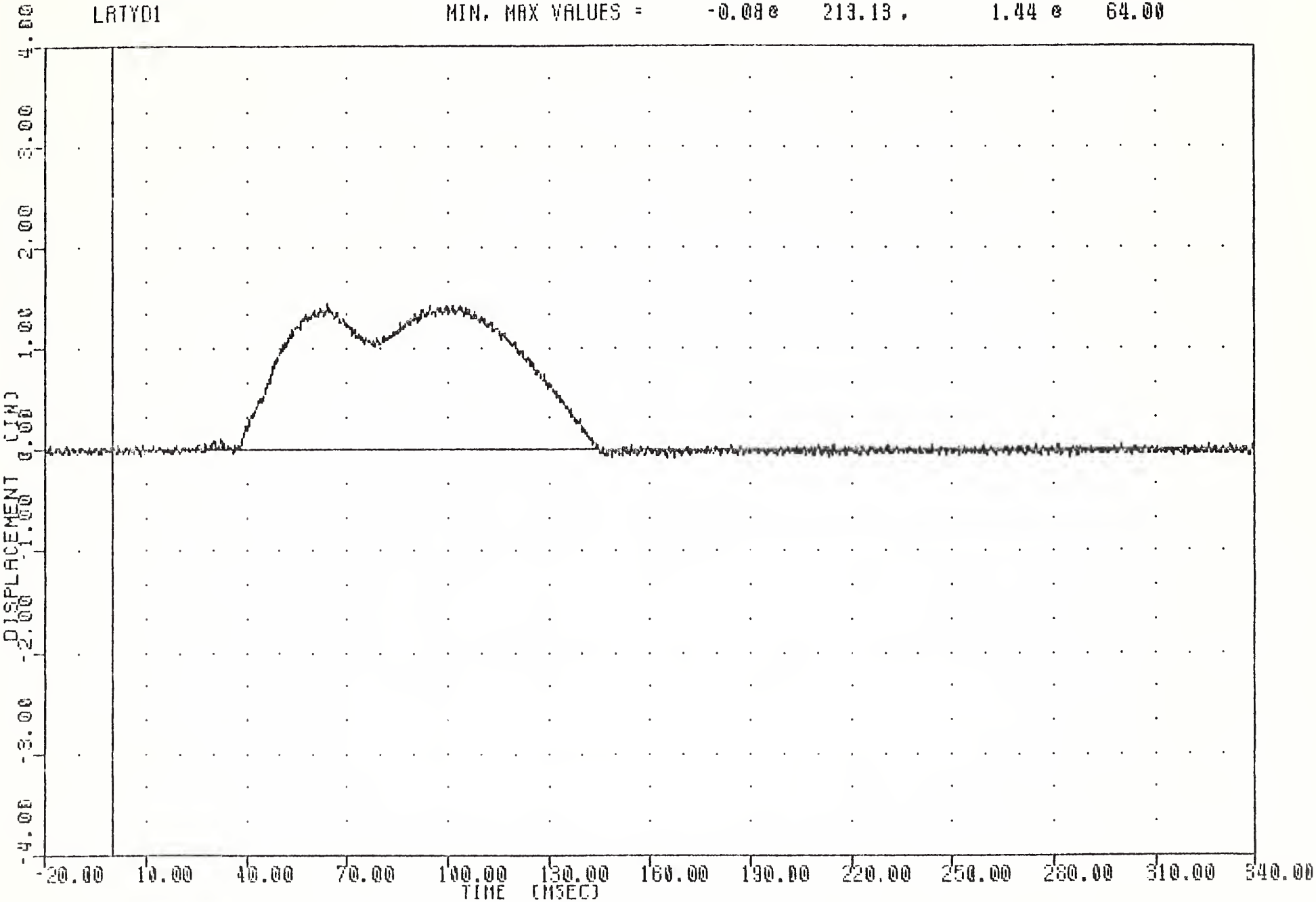
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER LEFT LOWER RIB ACCELERATION -2 Y AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:20:12
SI PROTECTION PROD VEH
85191000000
LLRYVR
FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -0.03@ -18.75 , 31.04 @ 232.50

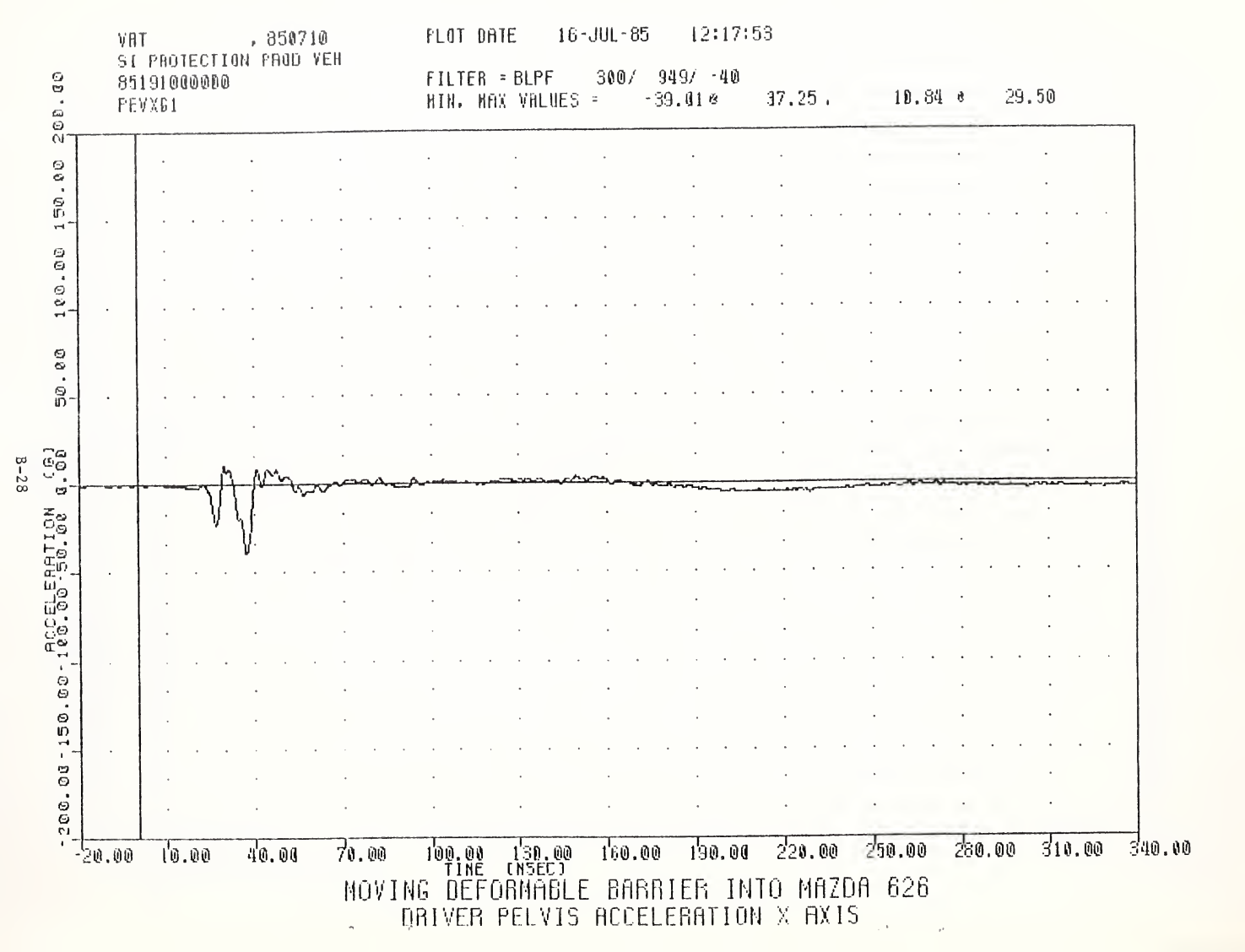


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LLRYGA

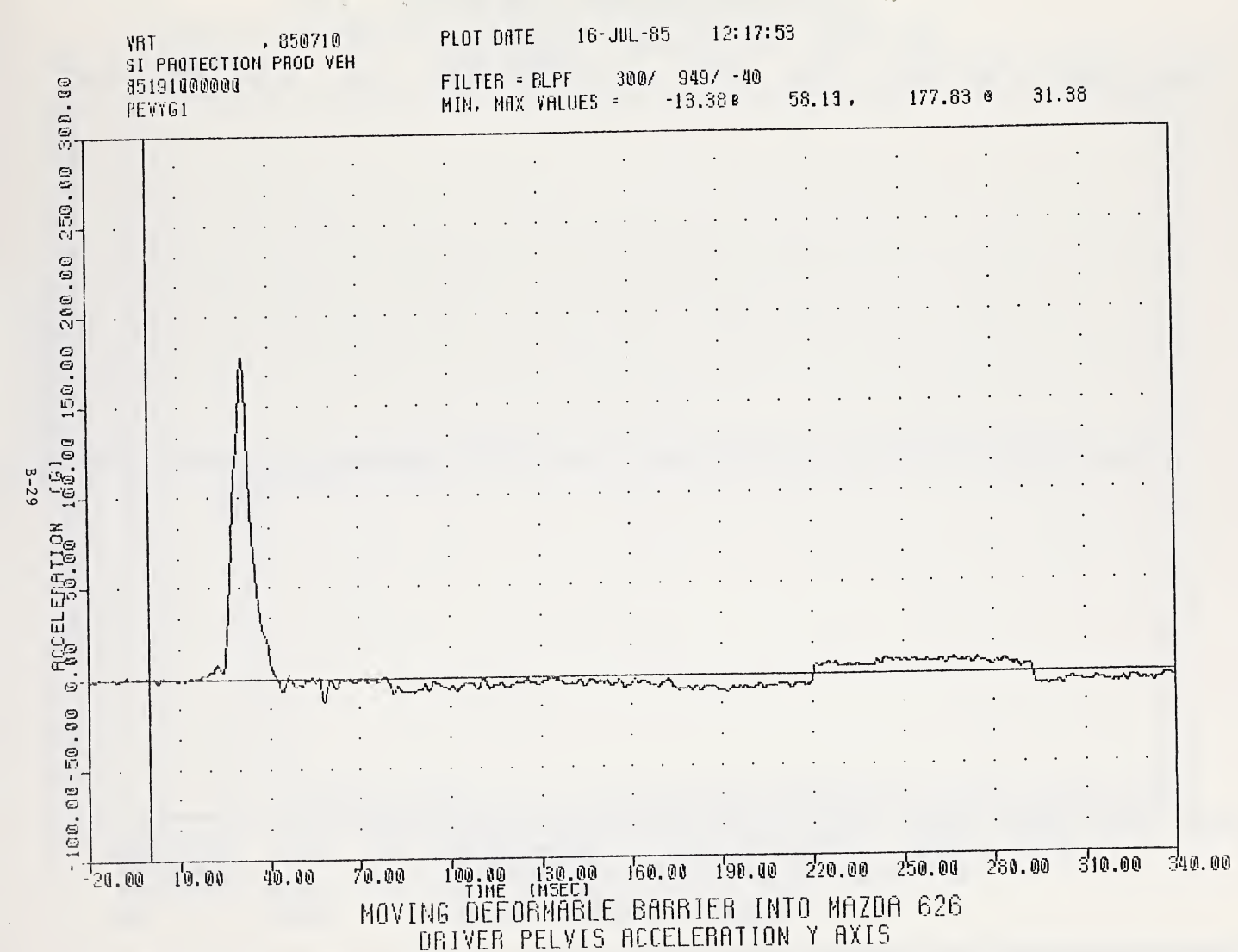
VRT , 850710 PLOT DATE 16-JUL-85 12:17:53
SI PROTECTION PROD VEH
8519100000D FILTER = ALPF 1650/ 5217/ -40
LRTYD1 MIN, MAX VALUES = -0.08 @ 213.13 , 1.44 @ 64.00



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER LEFT RIB TO SPINE DISPLACEMENT INCHES



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER PELVIS ACCELERATION X AXIS

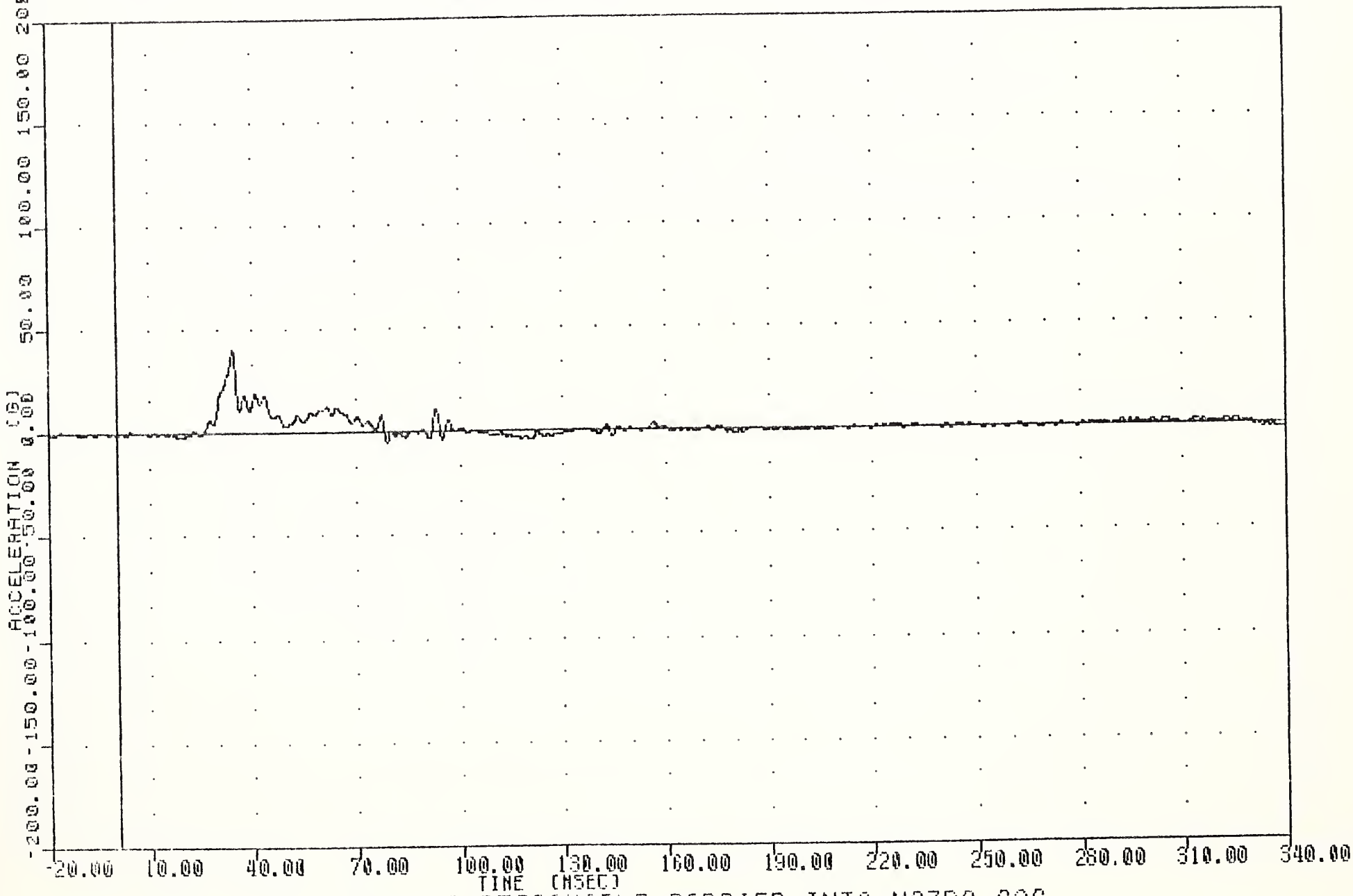


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER PELVIS ACCELERATION Y AXIS

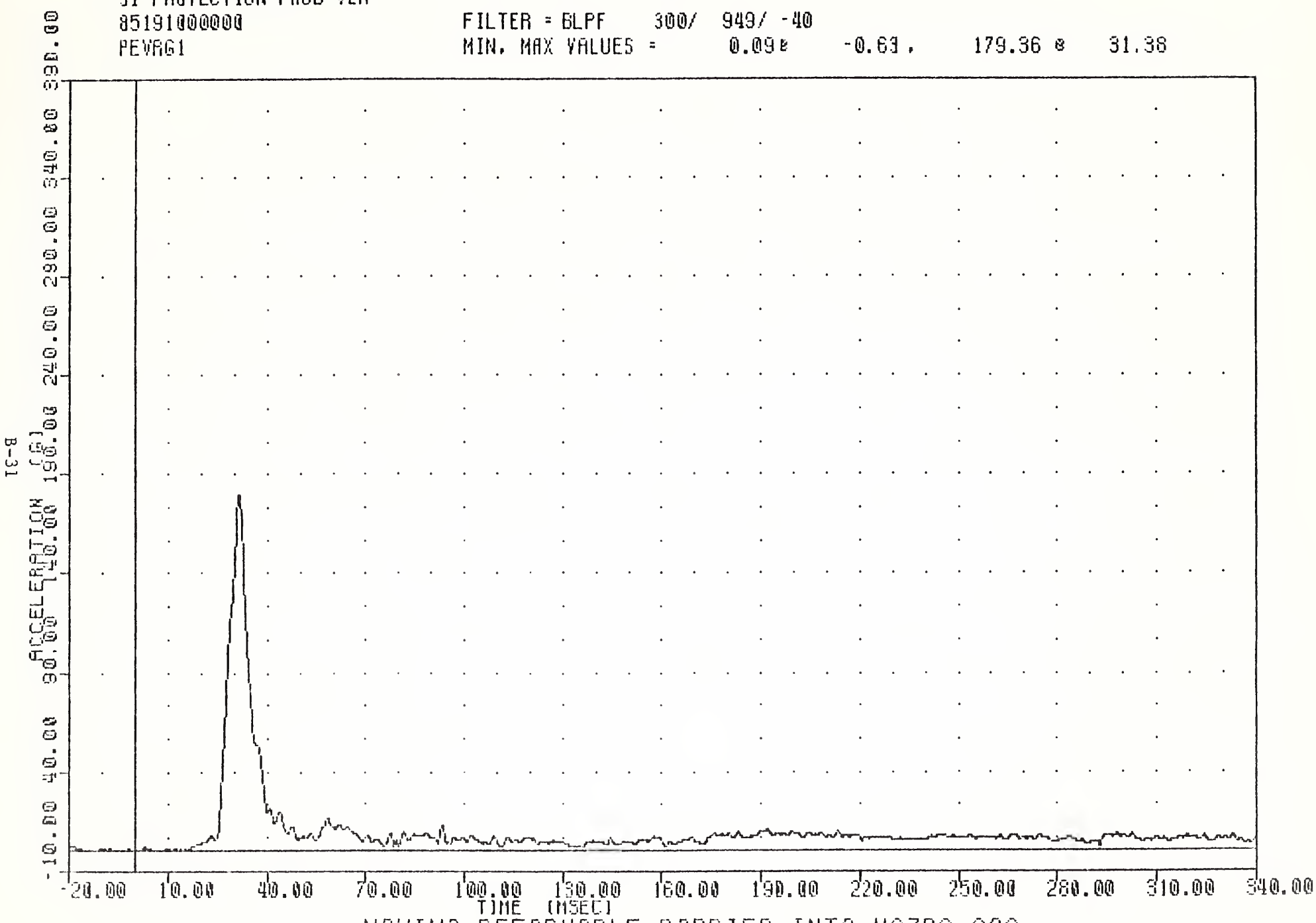
VAT , 850710
SI PROTECTION PROD VEH
85191000000
PEVZG1

PLOT DATE 16-JUL-85 12:17:53

FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -5.32 @ 79.00 , 40.46 @ 34.25

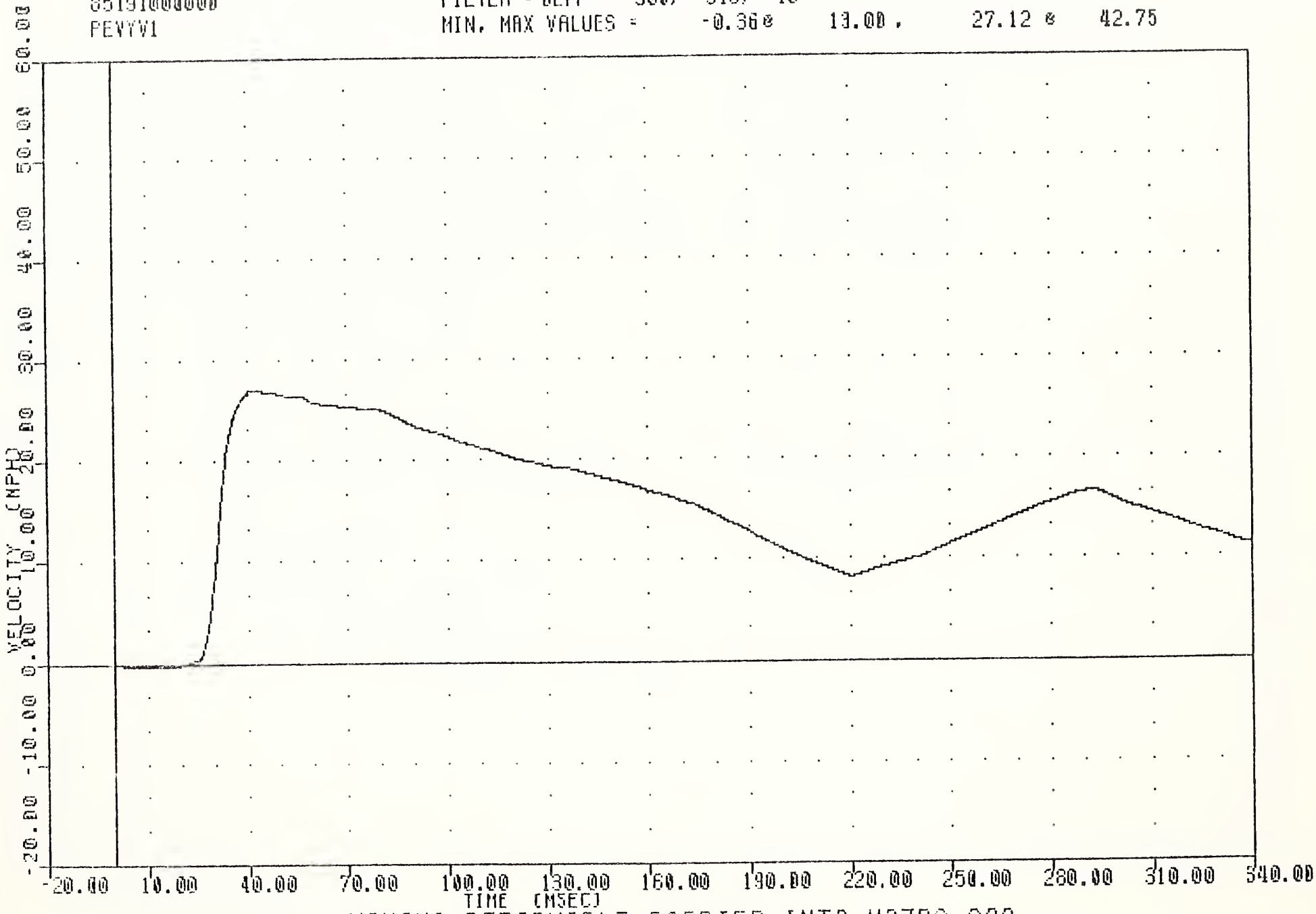


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER PELVIS ACCELERATION Z AXIS

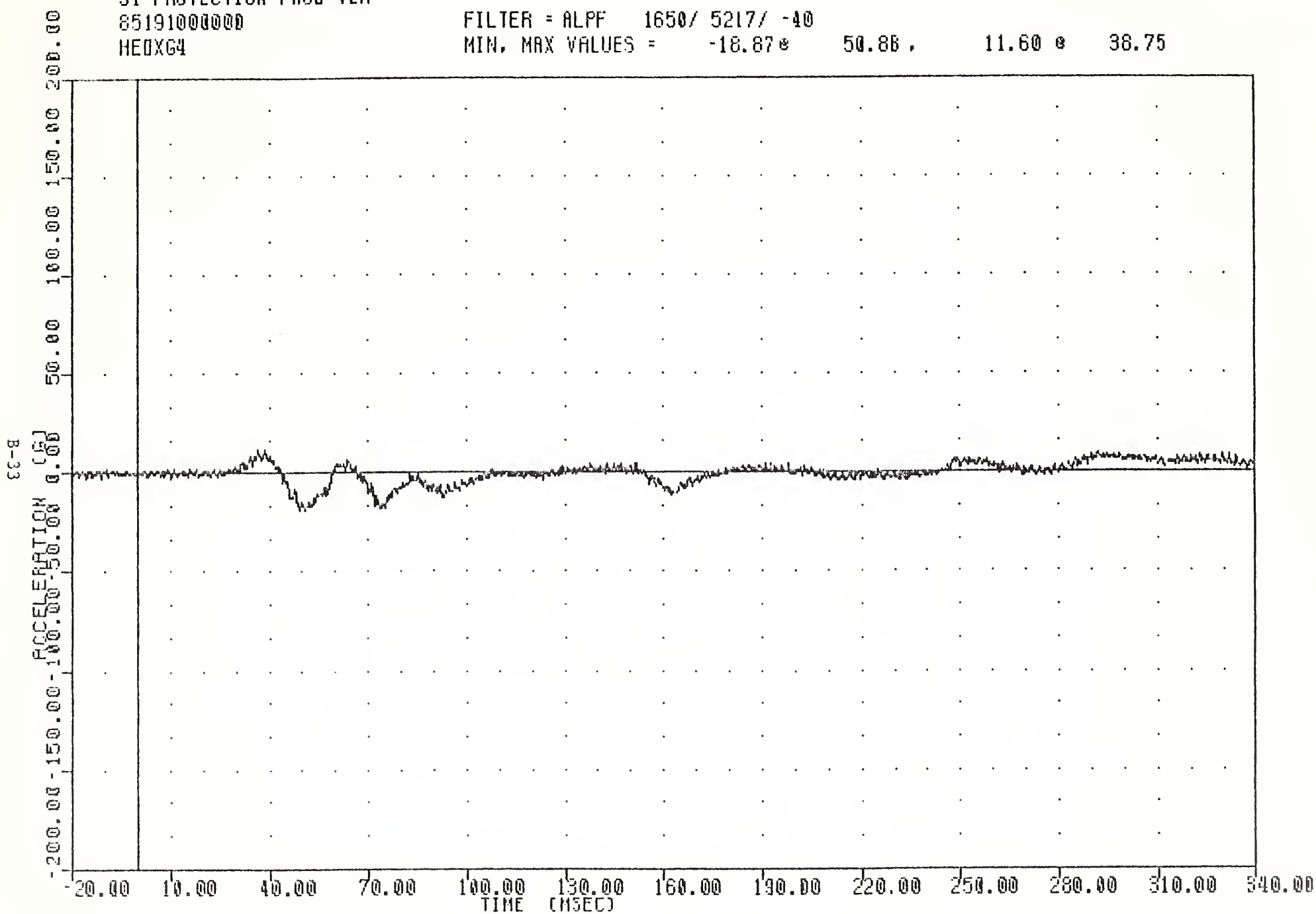


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DRIVER PELVIS RESULTANT

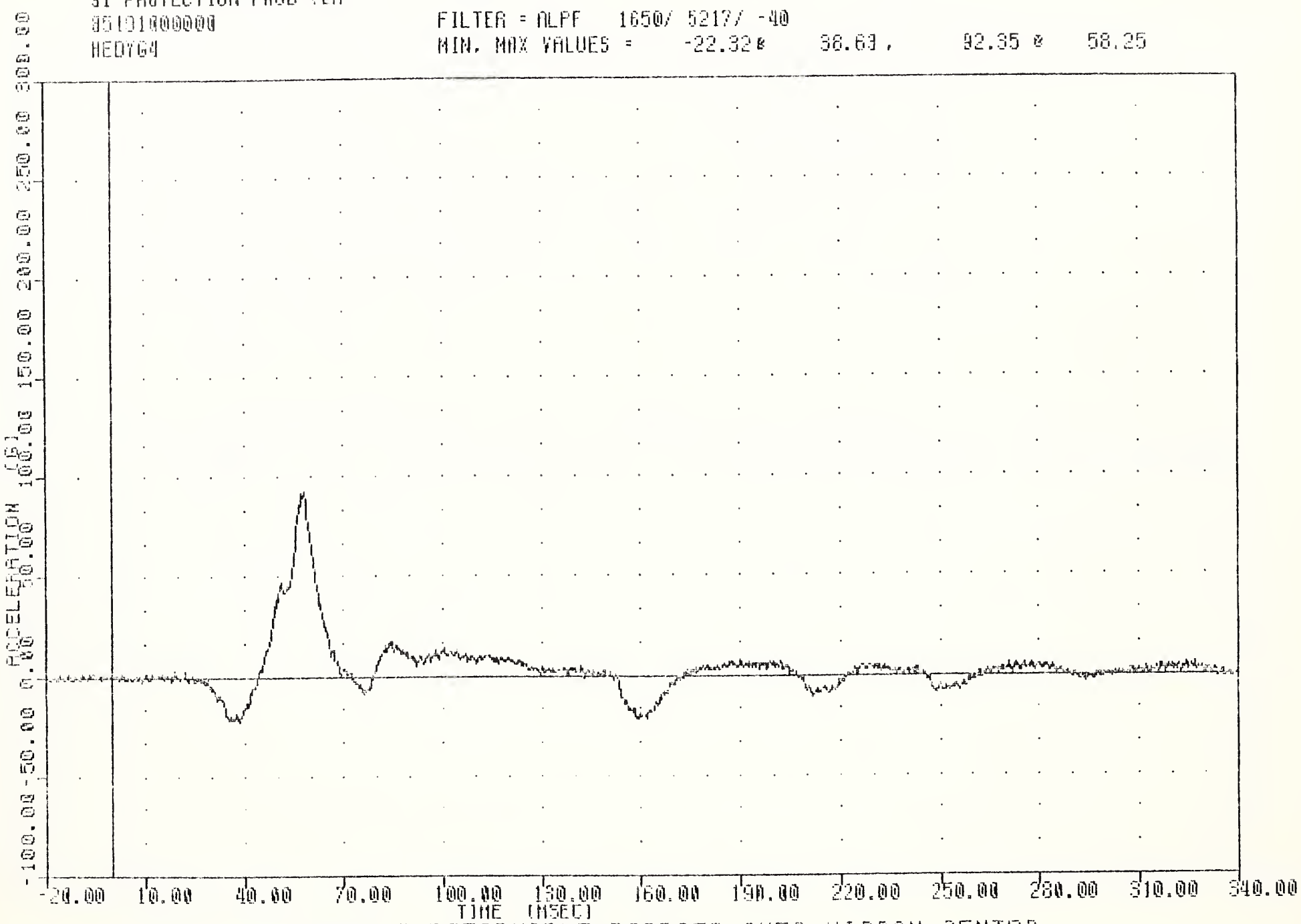
VRT , 850710 PLOT DATE 16-JUL-85 12:17:53
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
PEVYV1 MIN, MAX VALUES = -0.36@ 13.00 , 27.12 @ 42.75



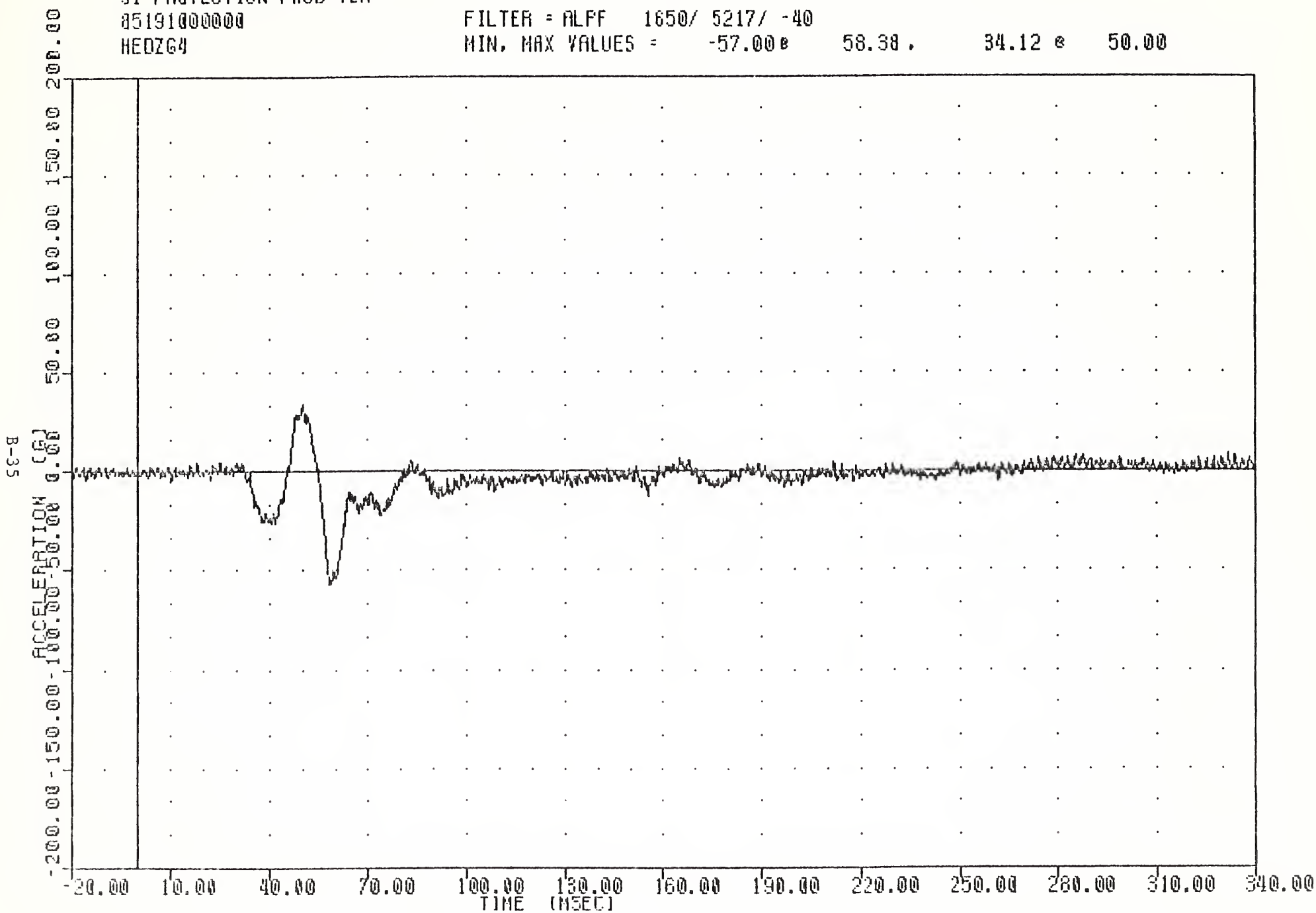
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING PEVYG1



MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER HEAD ACCELERATION X AXIS

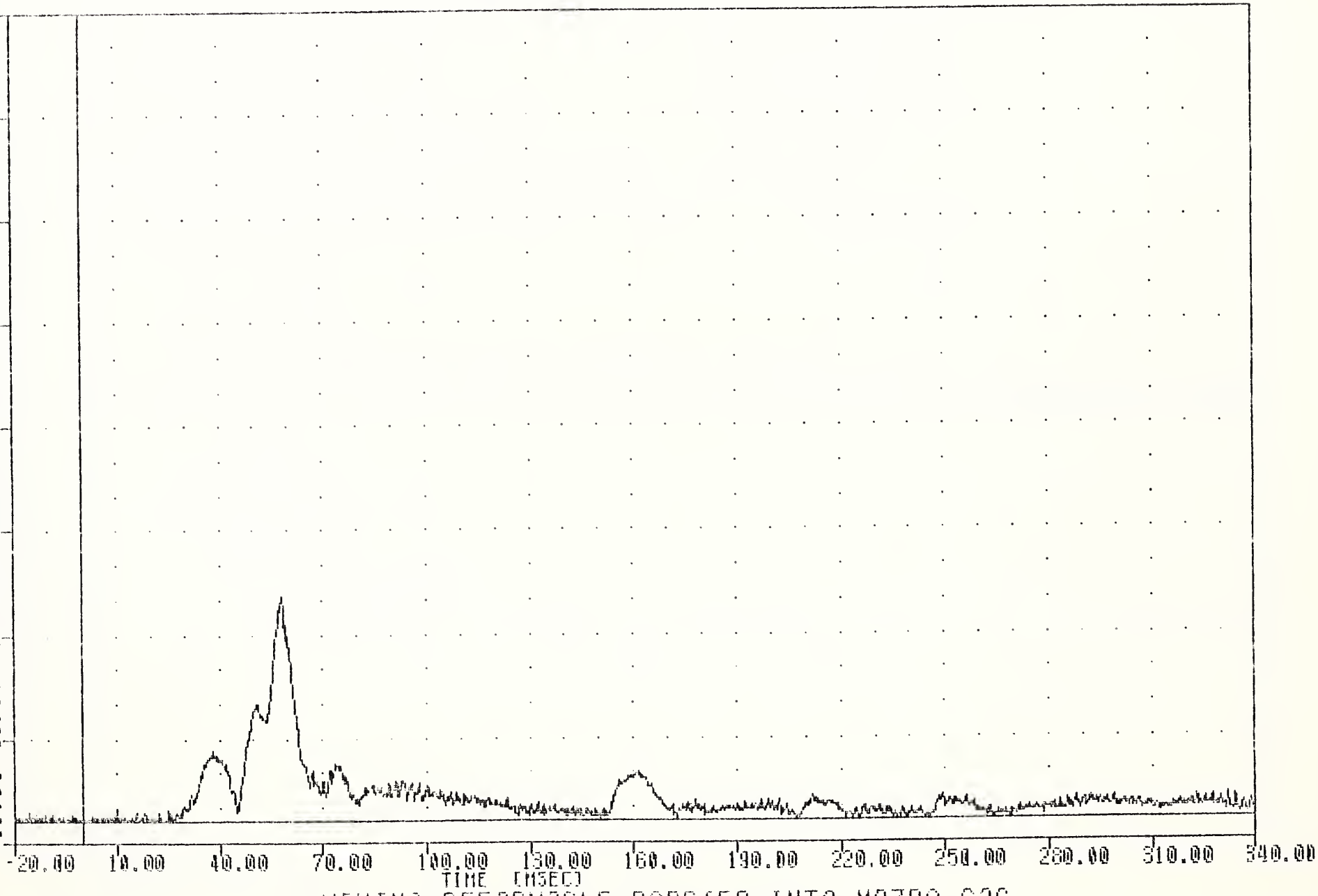


MOVING DEFORMABLE BARRIER INTO NISSAN SENTRA
PASSENGER HEAD ACCELERATION Y AXIS

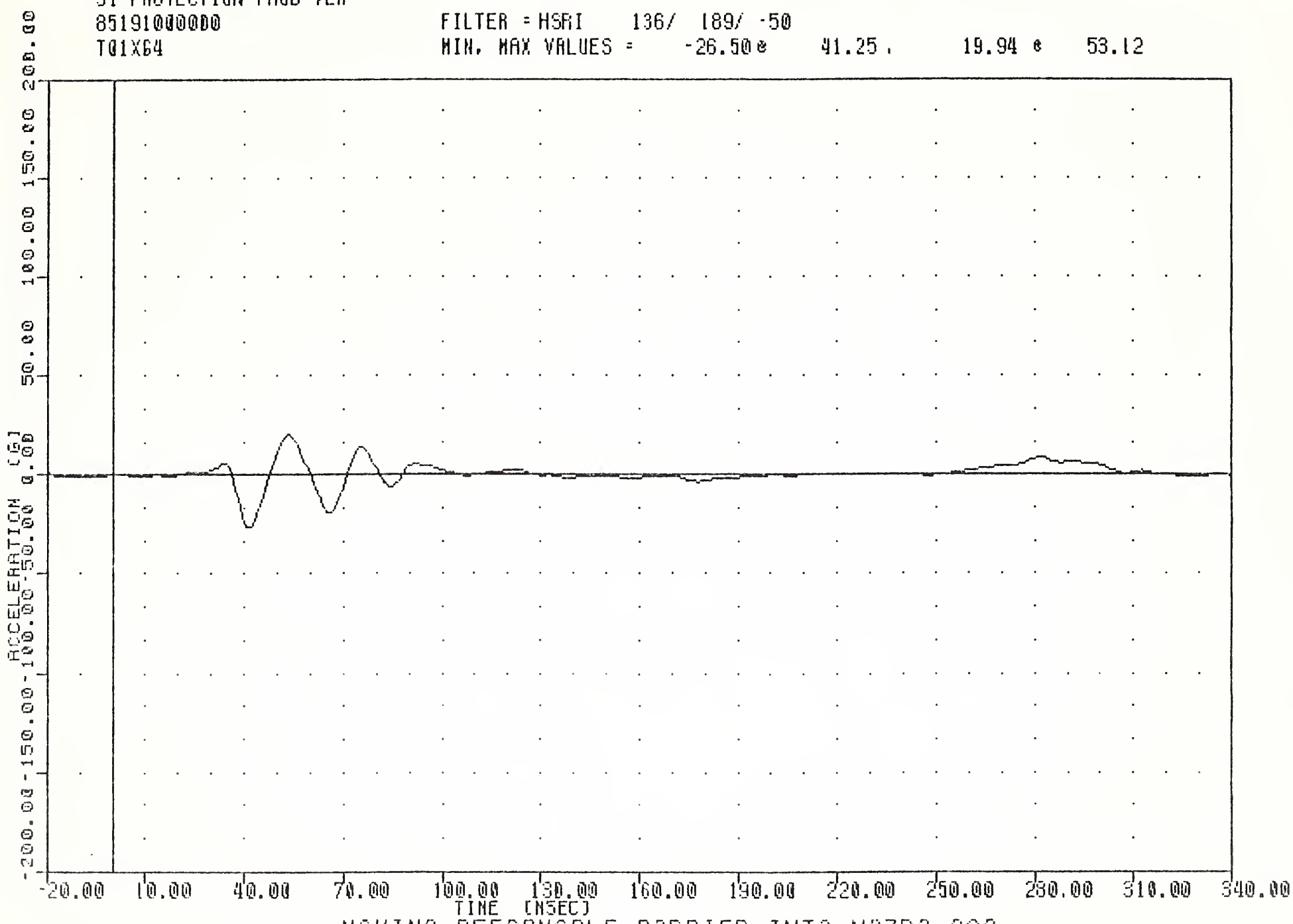


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER HEAD ACCELERATION Z AXIS

VRT , 850710 PLOT DATE 19-JUL-85 10:00:43
SI PROTECTION PROD VEH
85191000000 FILTER = ALPF 1650/ 5217/ -40
HEDR64 MIN, MAX VALUES = 0.17@ -3.75 , 108.14 @ 58.25

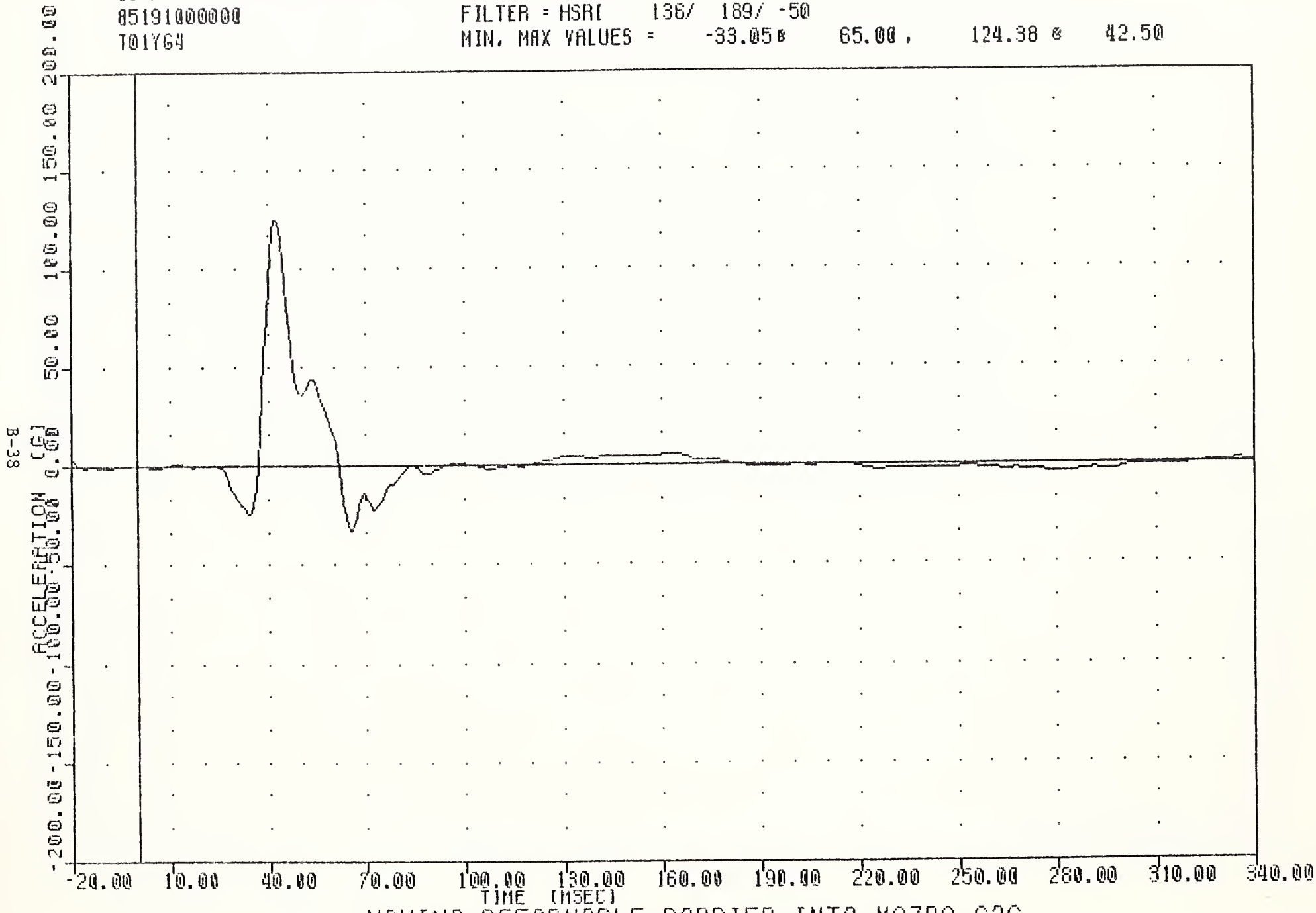


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER HEAD RESULTANT

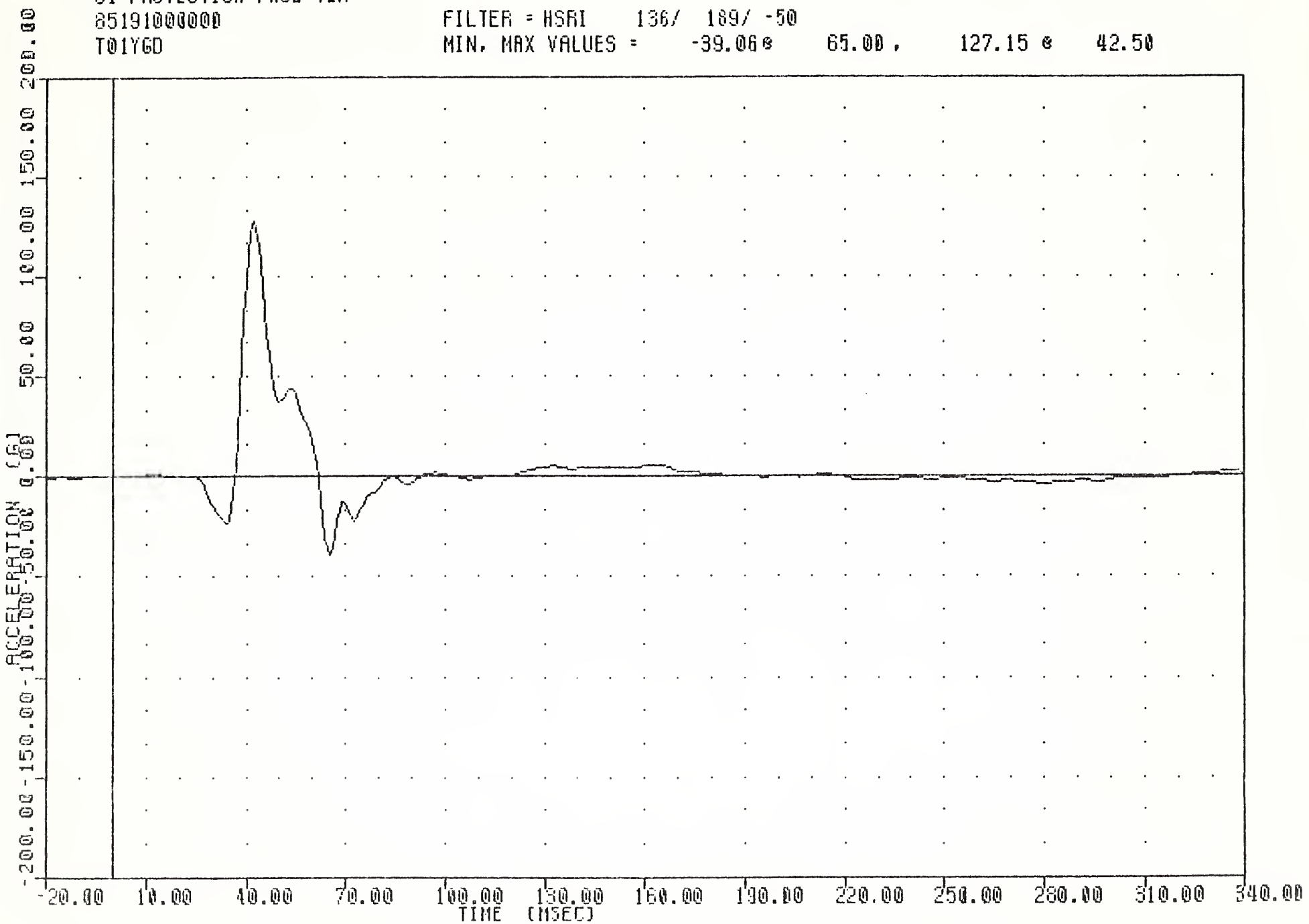


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER UPPER SPINE ACCELERATION X AXIS

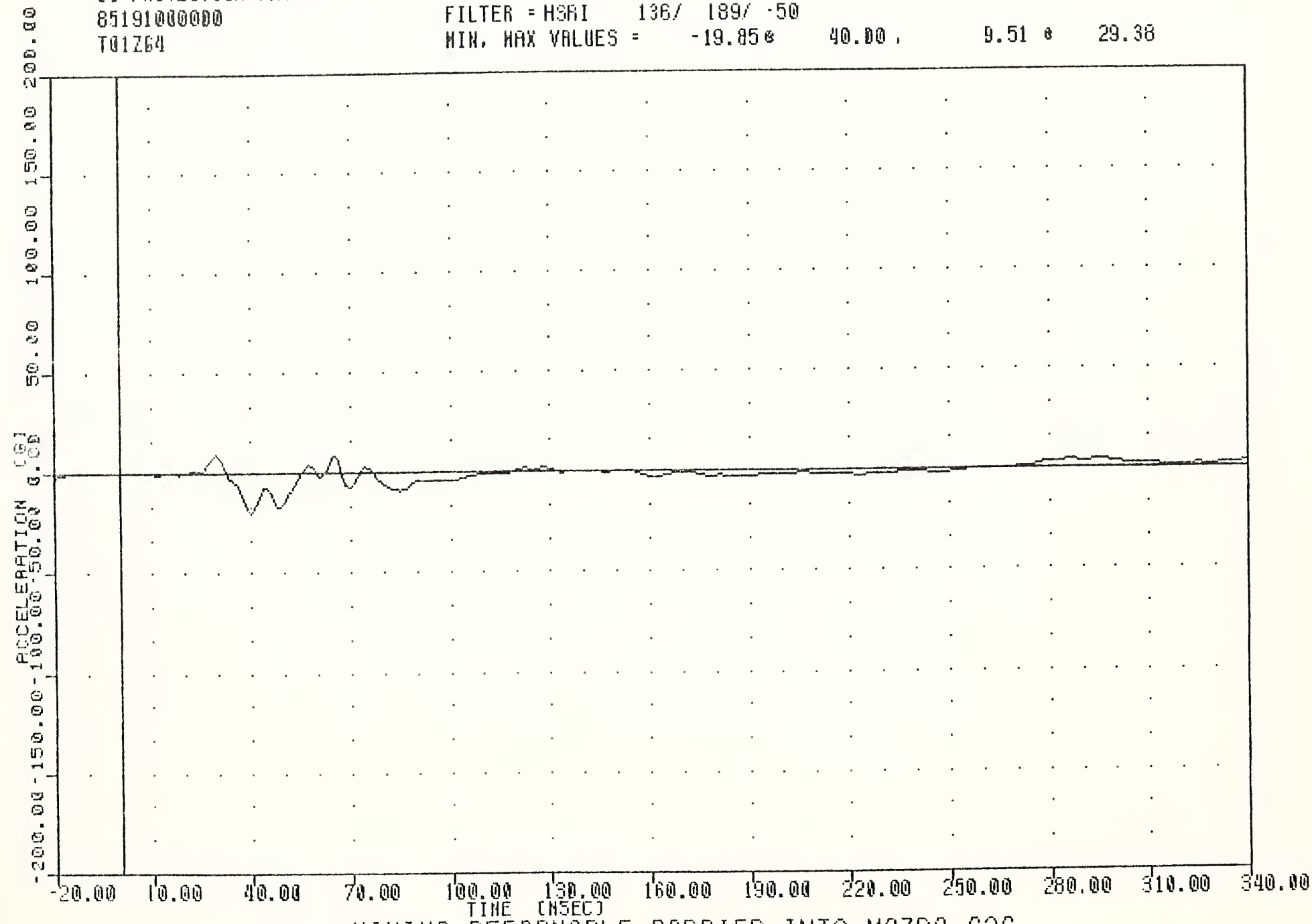
VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
85191000000 FILTER = HSRI 136/ 189/ -50
T01Y64 MIN, MAX VALUES = -33.05@ 65.00 , 124.38 @ 42.50



MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER UPPER SPINE ACCELERATION Y AXIS

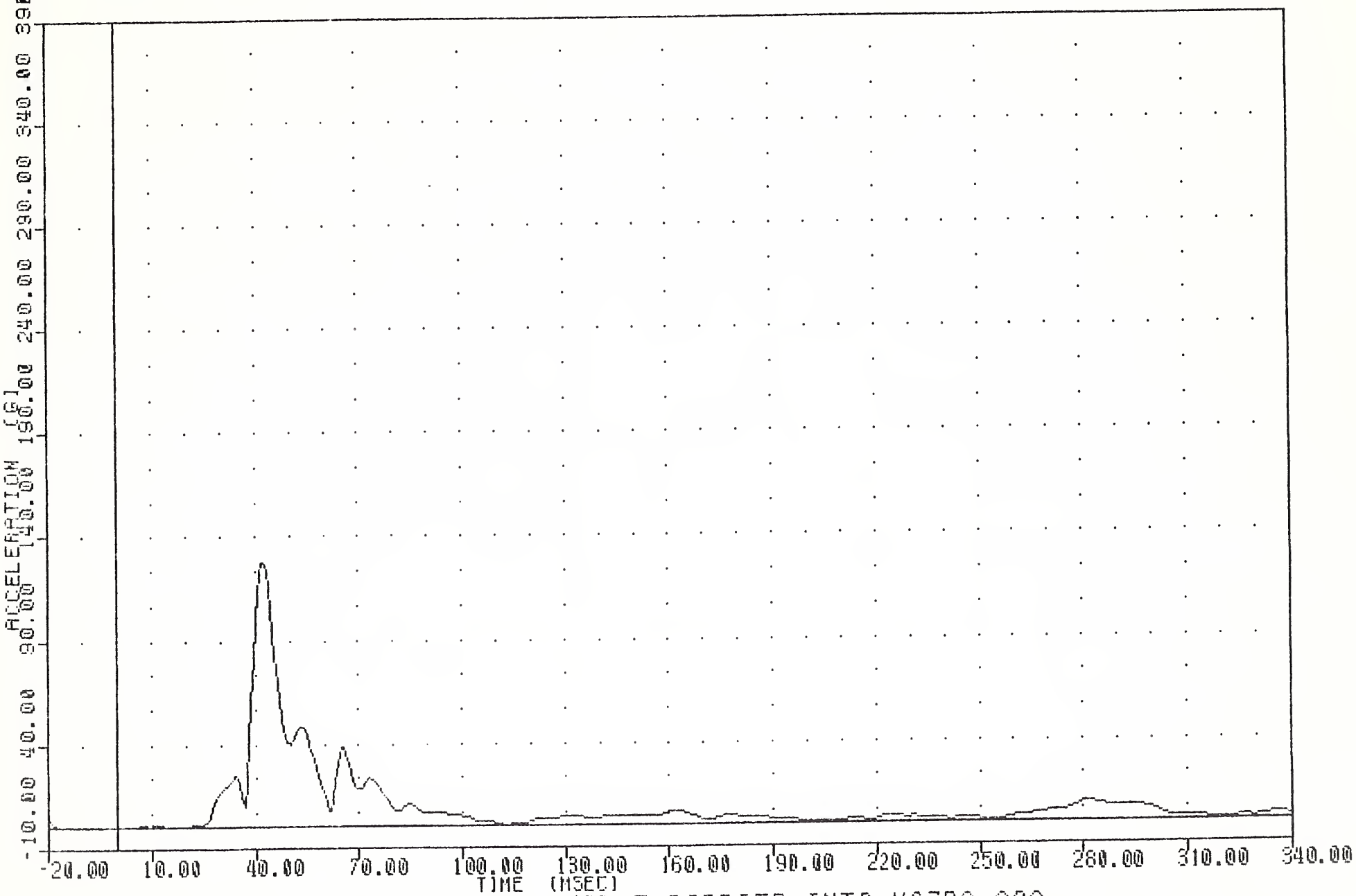


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER UPPER SPINE ACCELERATION -Z Y AXIS

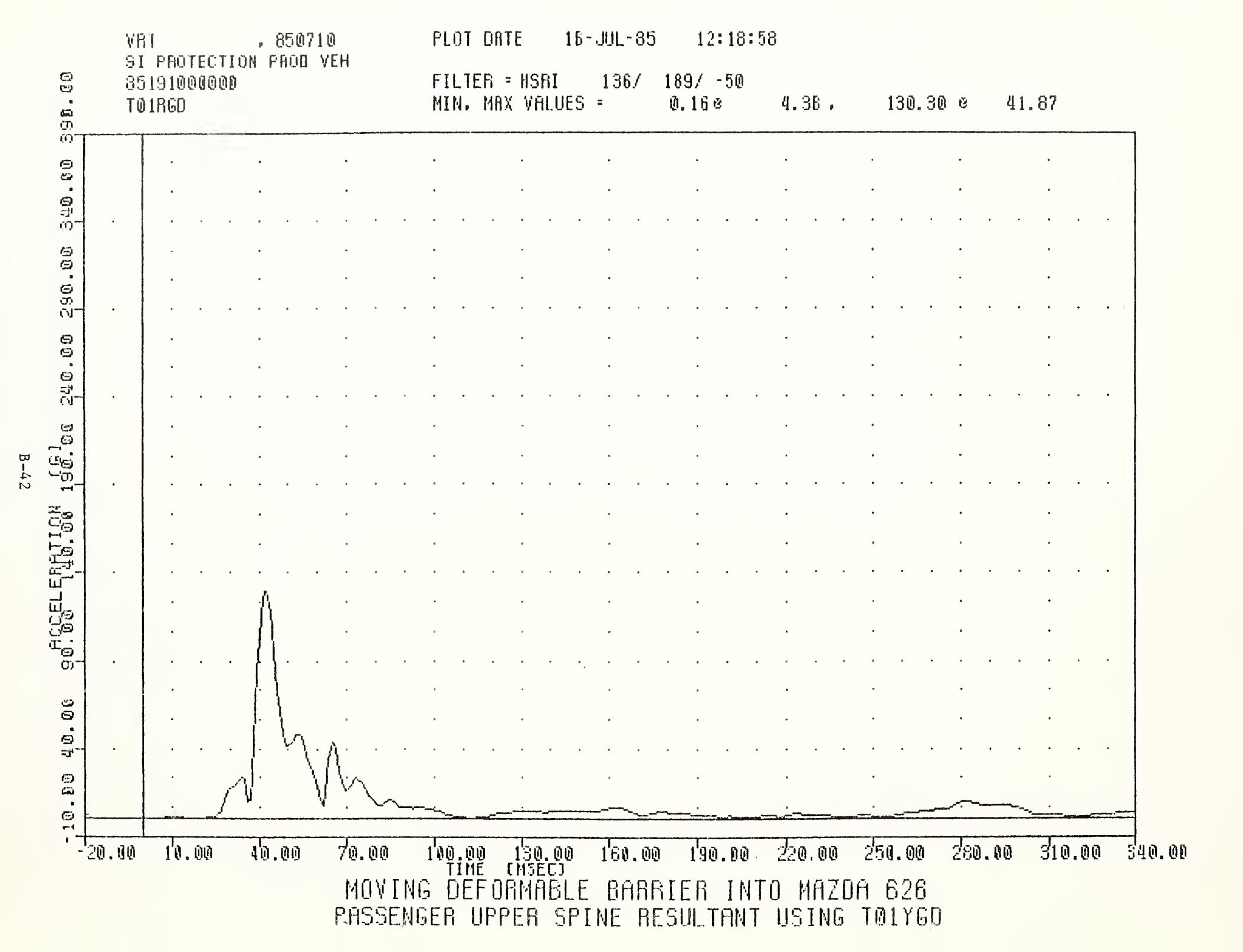


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER UPPER SPINE ACCELERATION Z AXIS

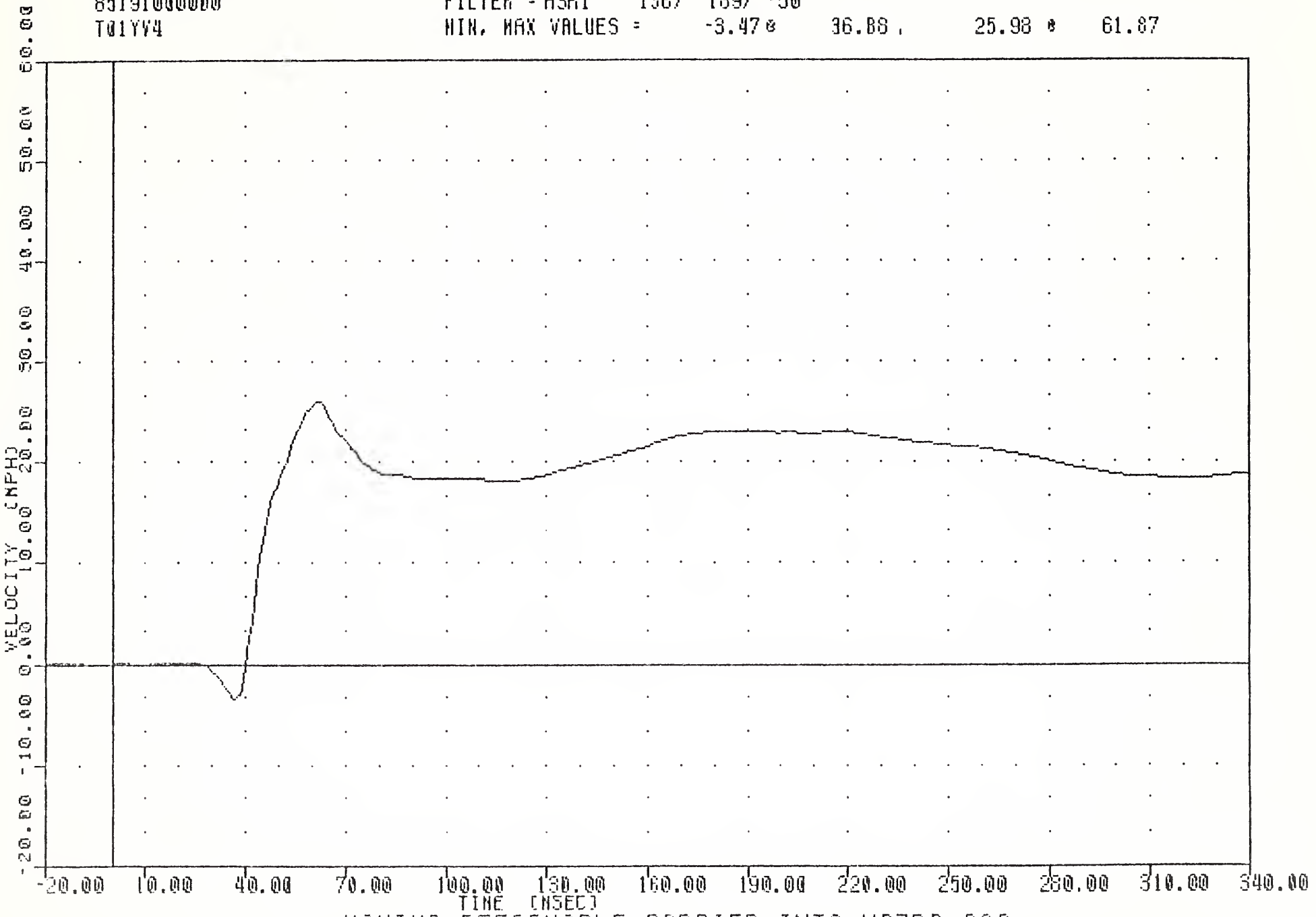
VRT , 850710 PLOT DATE 16-JUL-85 12:18:56
SI PROTECTION PROD VEH
8519100000C FILTER = HSRI 136/ 189/ -50
T01RG4 MIN, MAX VALUES = 0.27@ 3.13, 127.42 @ 41.87



MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER UPPER SPINE RESULTANT


VRI , 850710
SI PROTECTION PROD VEH
8519100000
T01RGD
PLOT DATE 16-JUL-85 12:18:58
FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = 0.16 @ 4.36 , 130.30 @ 41.87
ACCELERATION (G)
-10.00 40.00 90.00 140.00 190.00 240.00 290.00 340.00 390.00
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)
MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER UPPER SPINE RESULTANT USING T01YGD

VAT , 850710 PLOT DATE 16-JUL-85 12:20:12
SI PROTECTION PROD VEH
851910000000 FILTER = HSRI 136/ 189/ -50
T01YV4 MIN, MAX VALUES = -3.47 @ 36.88 , 25.98 @ 61.87

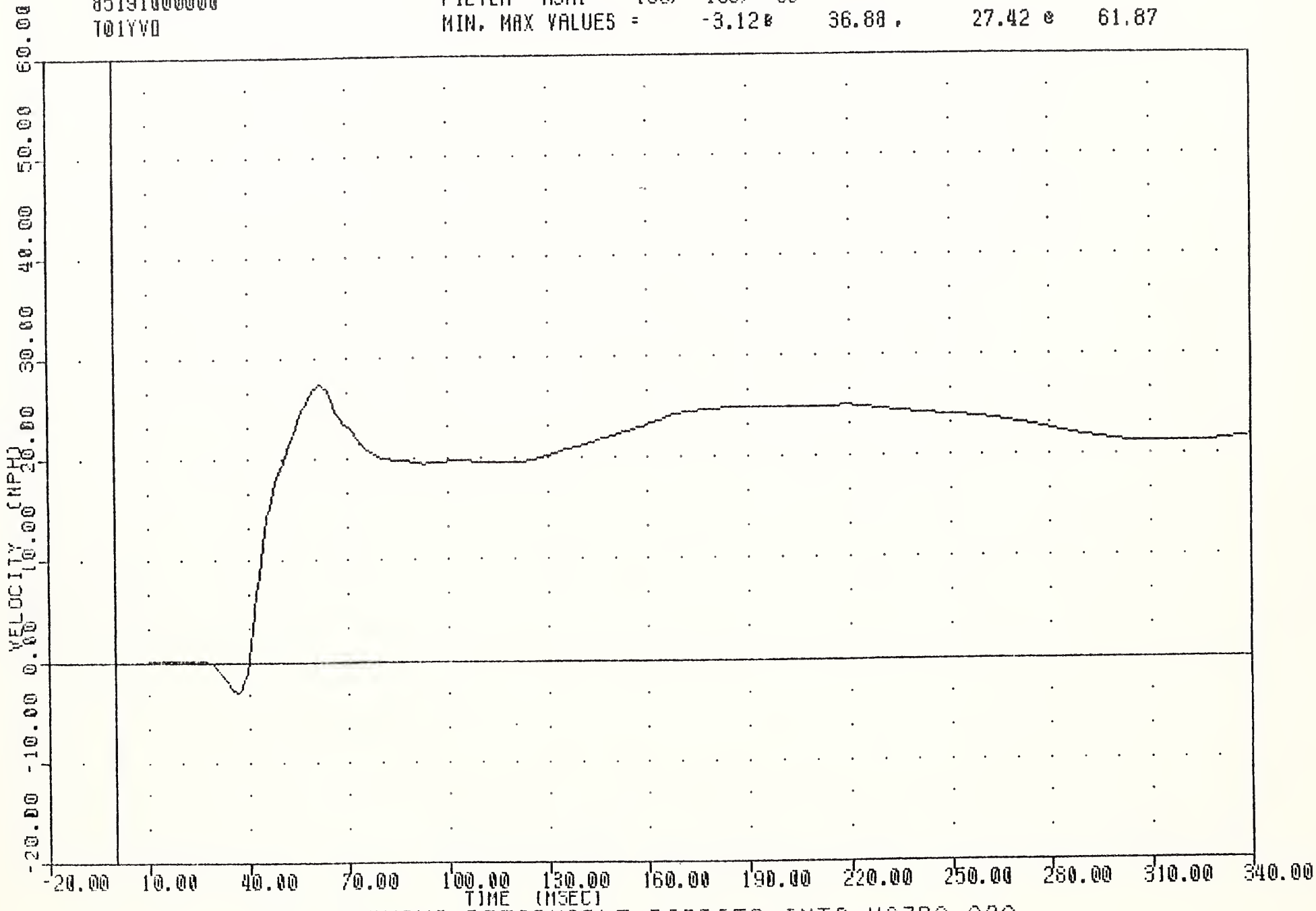


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING T01YG4

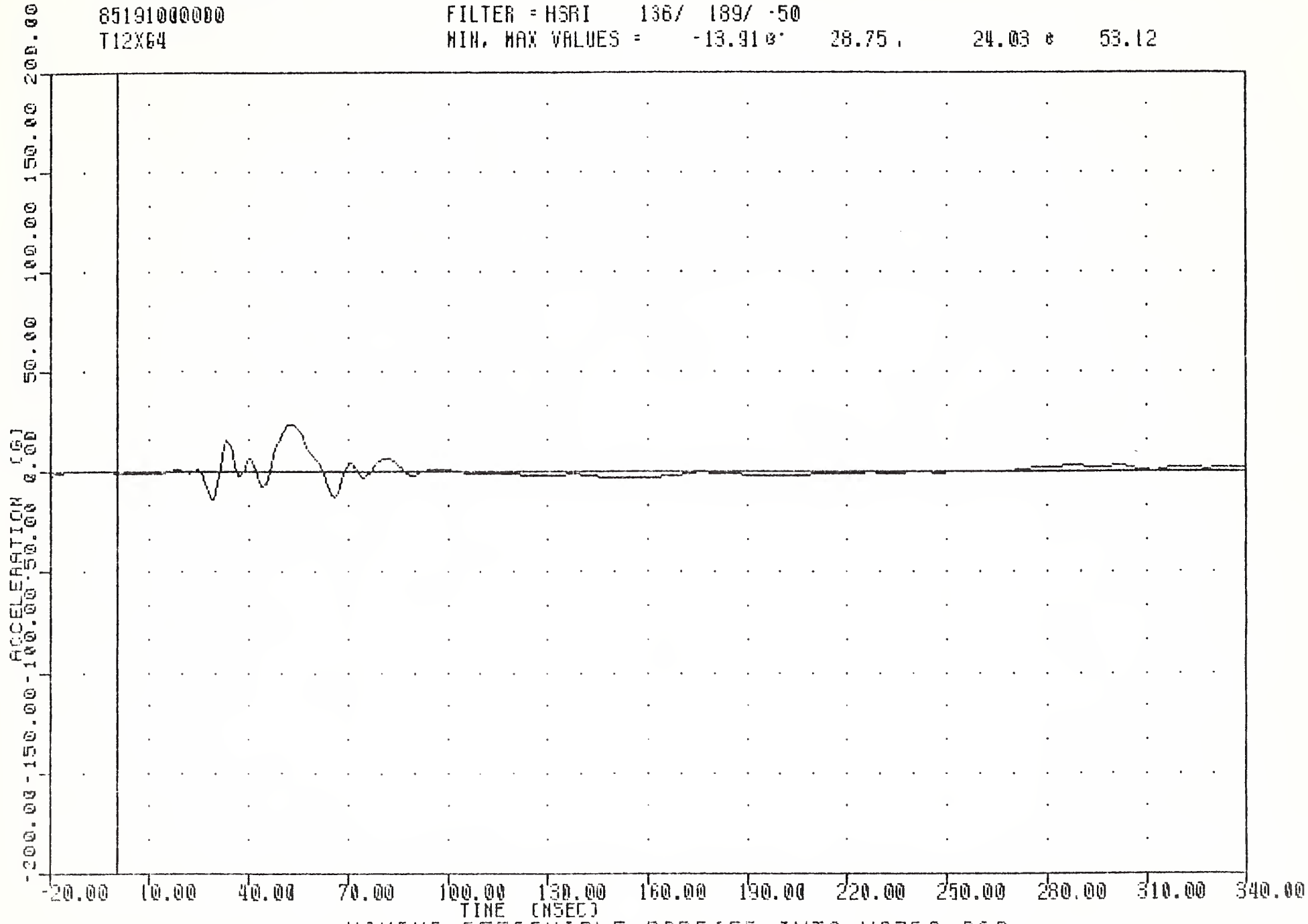
VRT , 850710
SI PROTECTION PROD VEH
85191000000
T01YYD

PLOT DATE 16-JUL-85 12:20:12

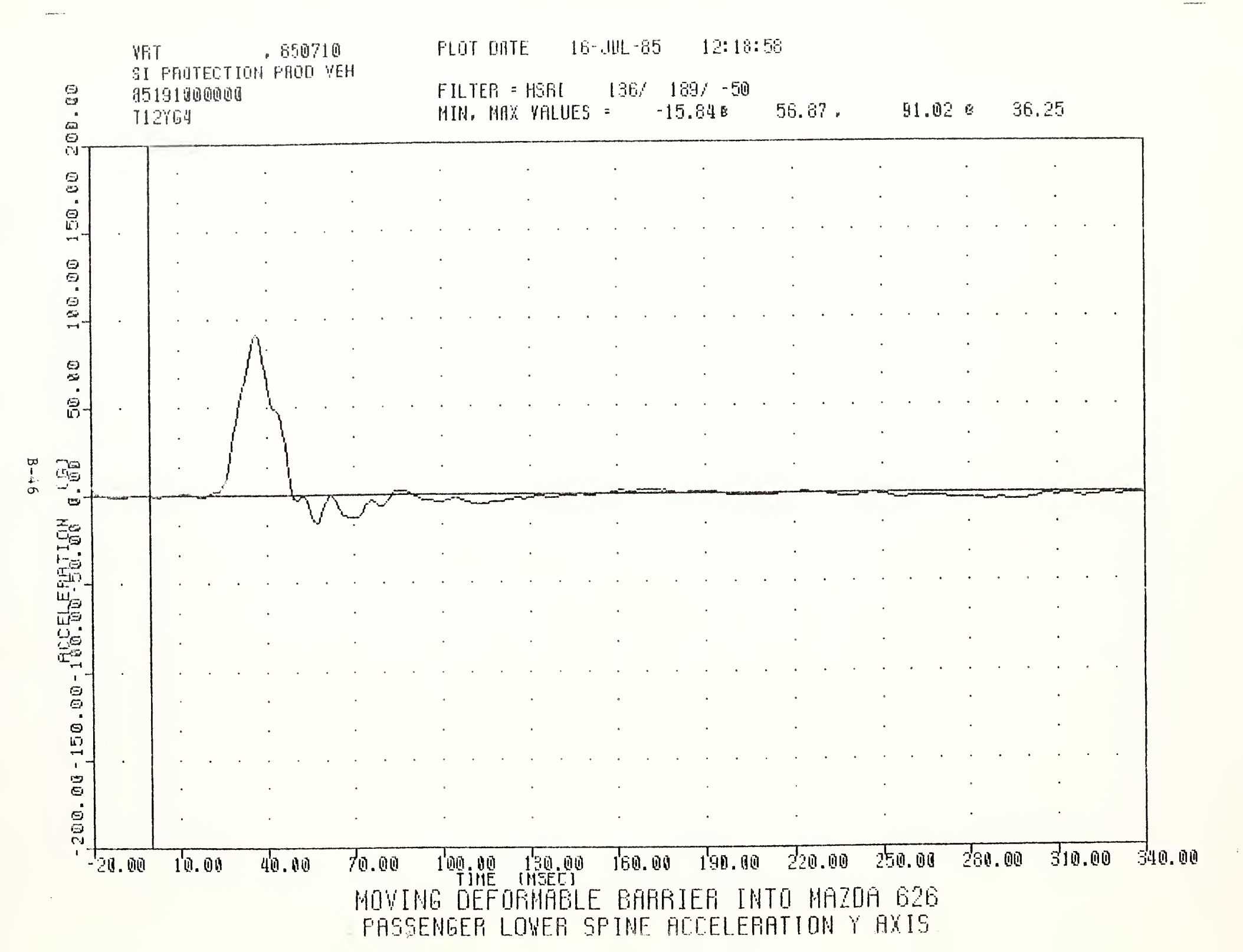
FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -3.12 @ 36.88 , 27.42 @ 61.87



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING T01YGD

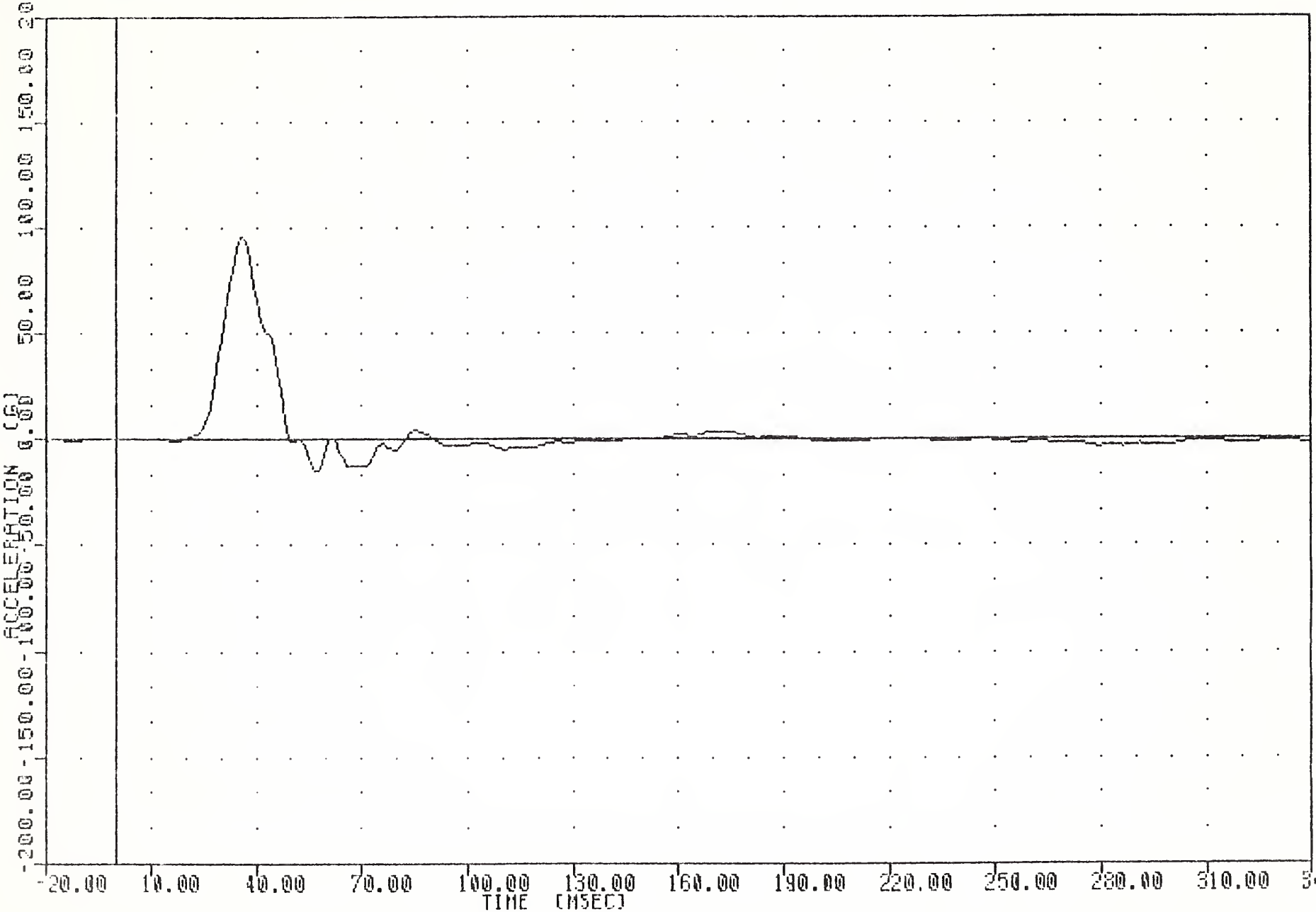


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LOWER SPINE ACCELERATION X AXIS

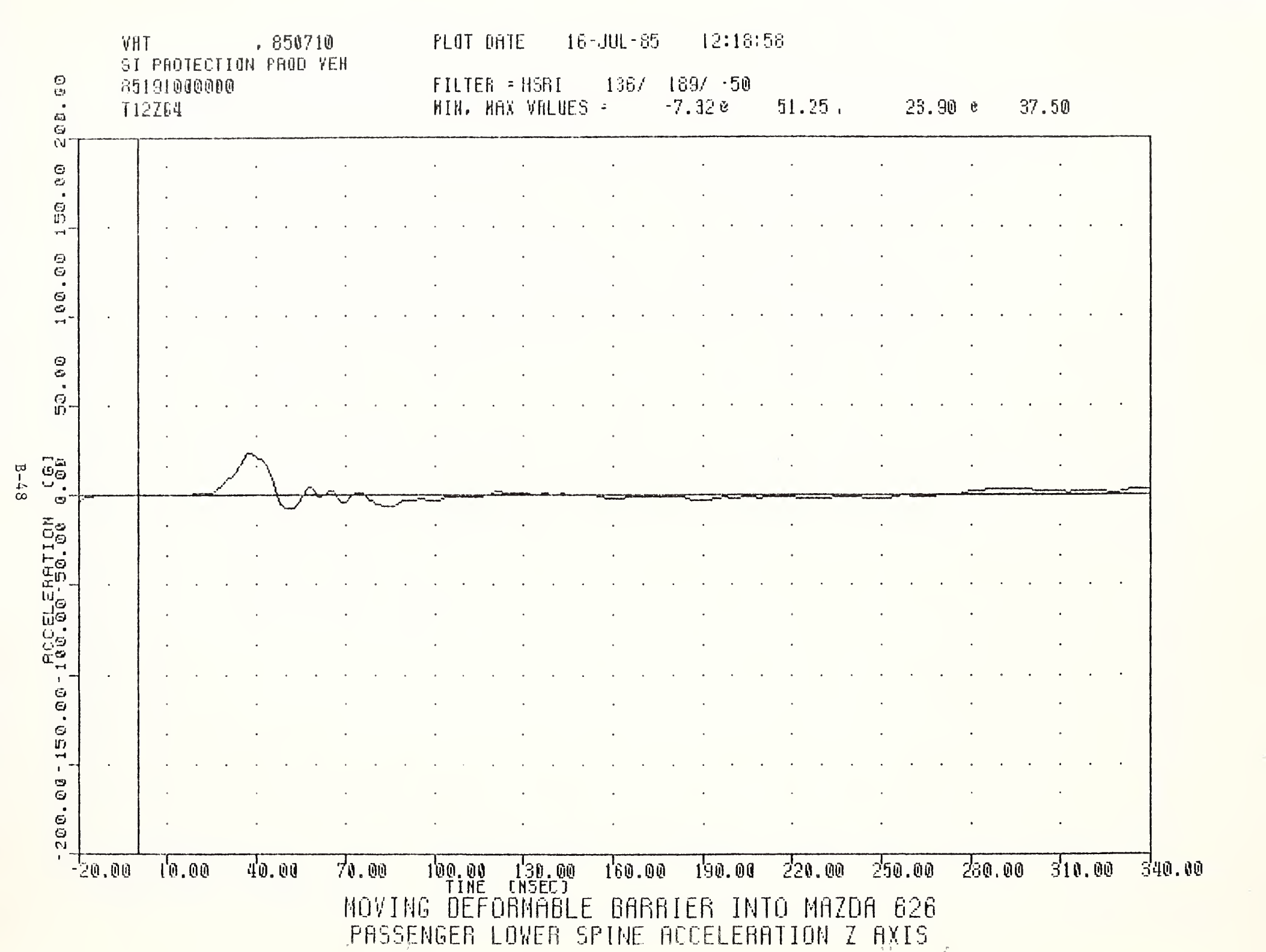


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LOWER SPINE ACCELERATION Y AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
8519100@000 FILTER = HSRI 136/ 189/ -50
T12YGD MIN. MAX VALUES = -14.82 @ 56.87 , 95.57 @ 36.25

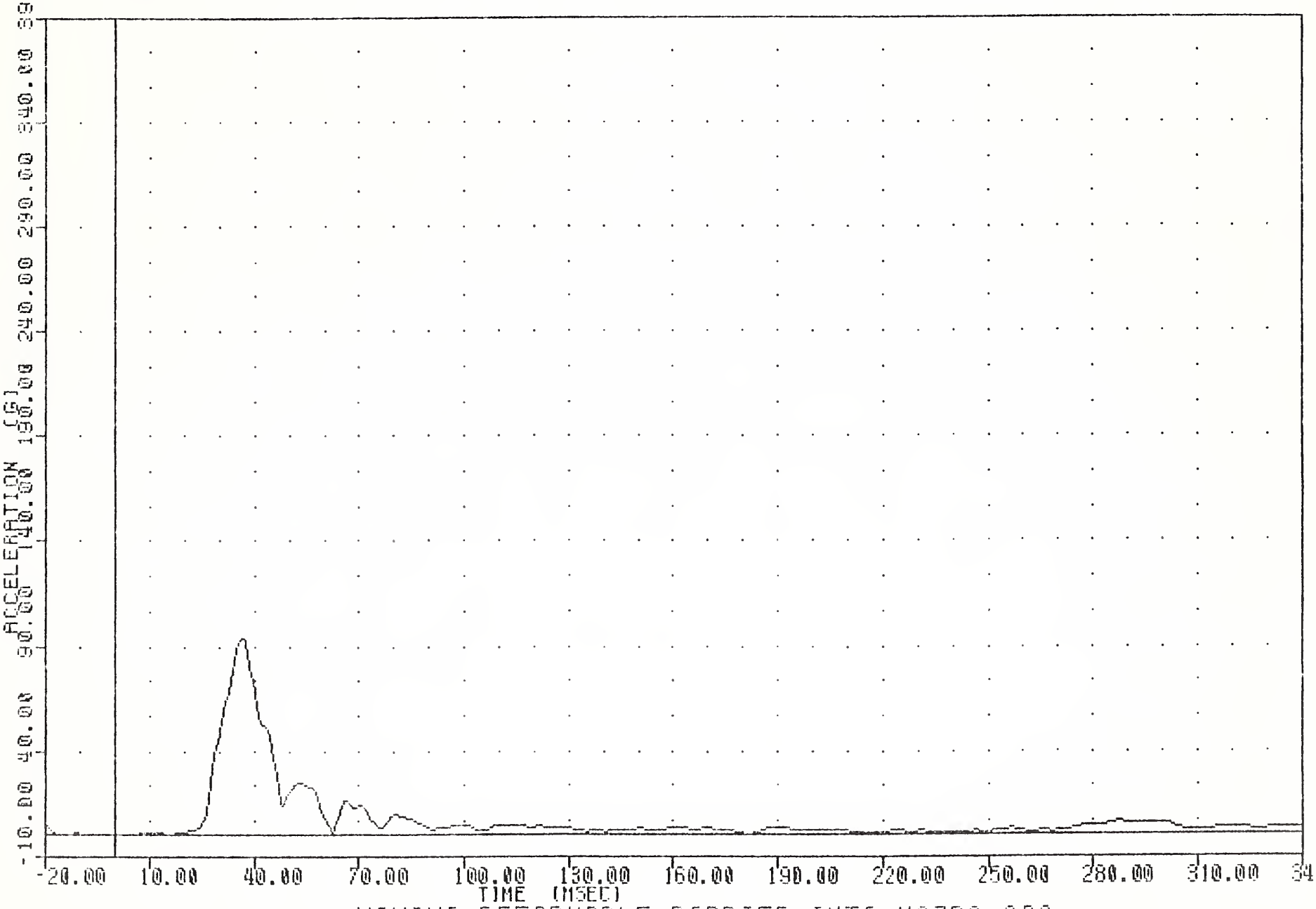


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LOWER SPINE ACCELERATION -Z Y AXIS



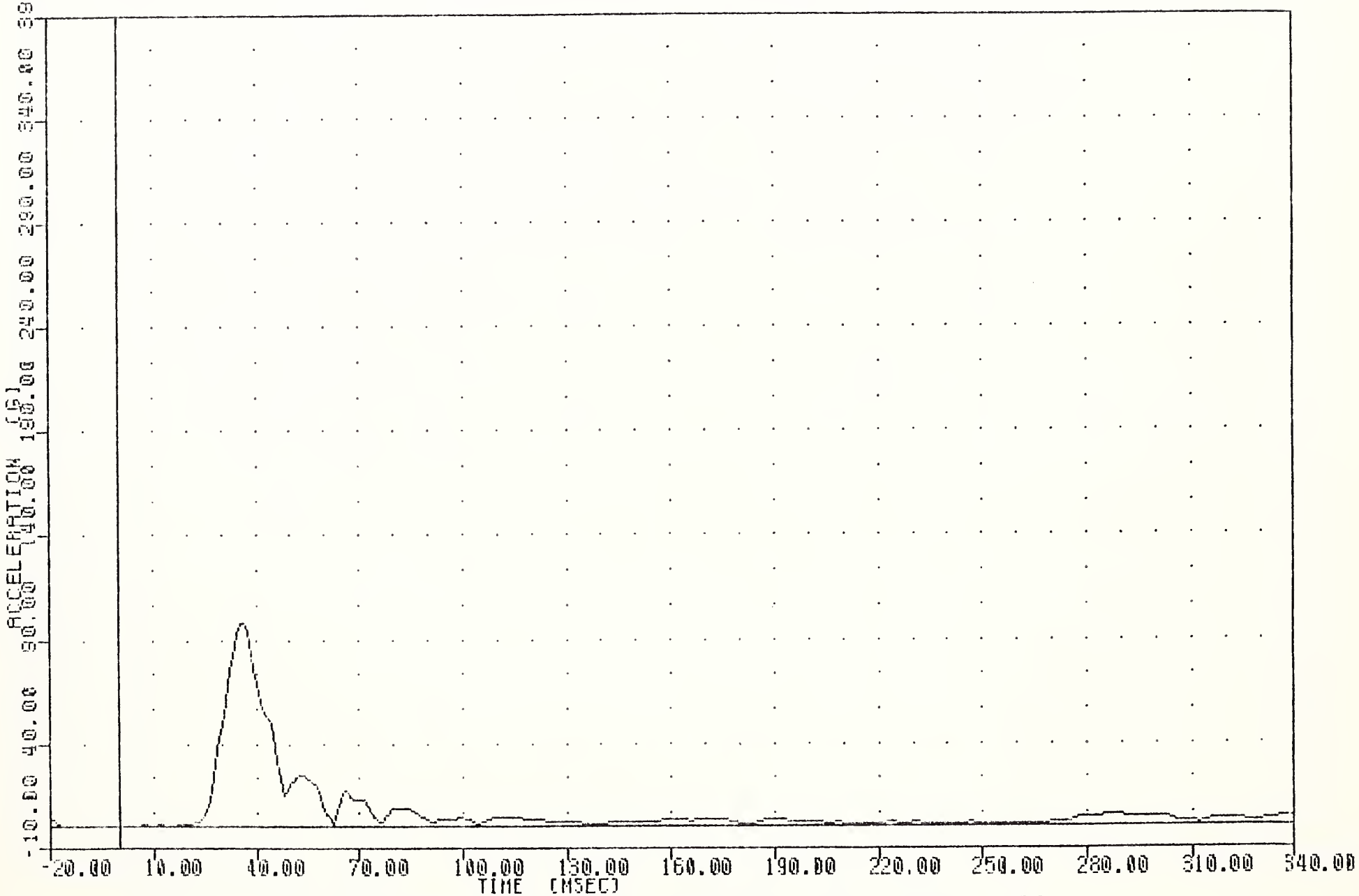
MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LOWER SPINE ACCELERATION Z AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
851910000000 FILTER = HSRI 136/ 189/ -50
T12RG4 MIN, MAX VALUES = 0.21 @ -6.25 , 93.77 @ 36.88



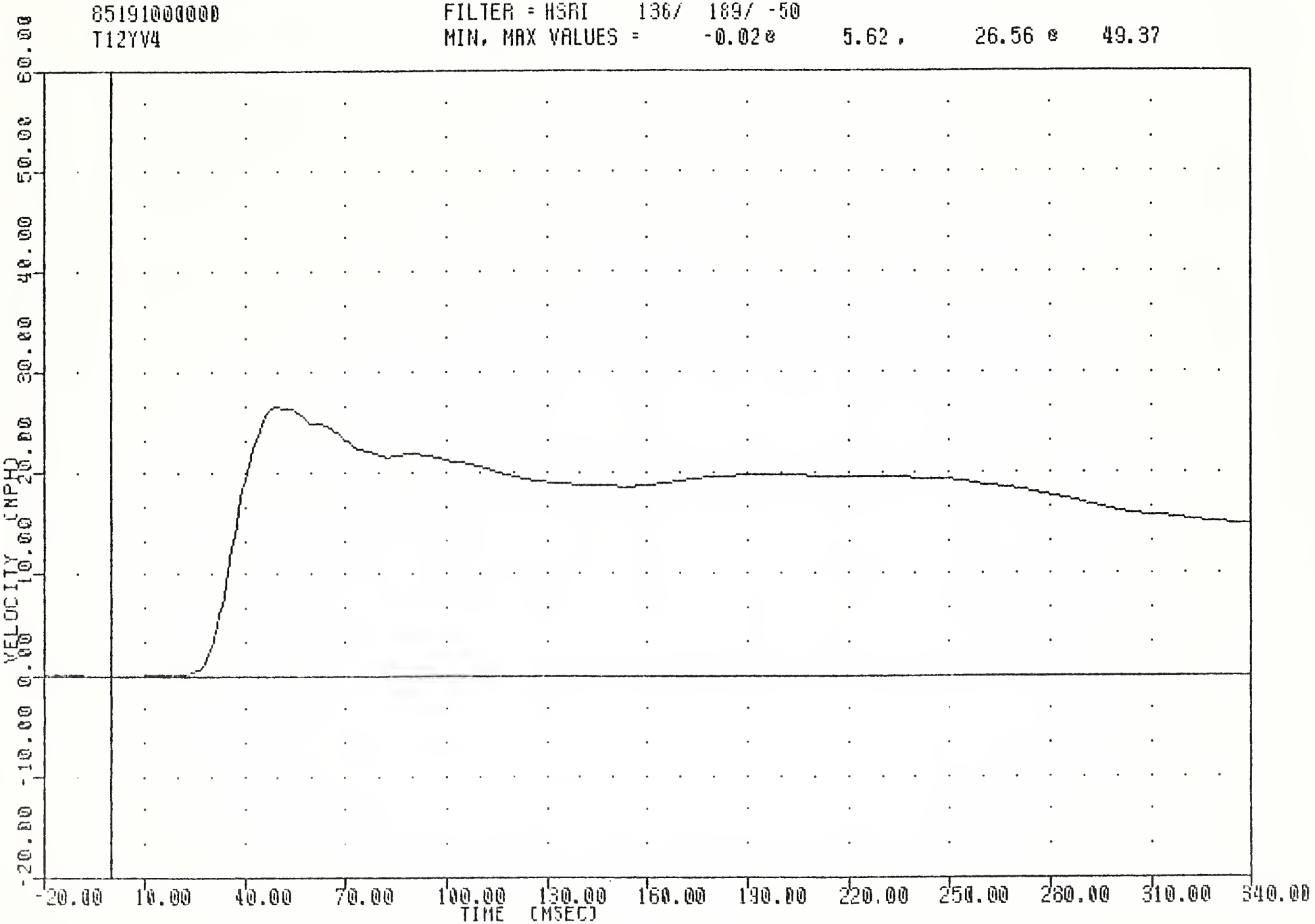
MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LOWER SPINE RESULTANT

VRT , 850710 PLOT DATE 18-JUL-85 12:18:58
SI PROTECTION PROD VEH
85191000000 FILTER = HSRI 136/ 189/ -50
T12RGD MIN, MAX VALUES = 0.19 @ -8.75 , 98.18 @ 36.25



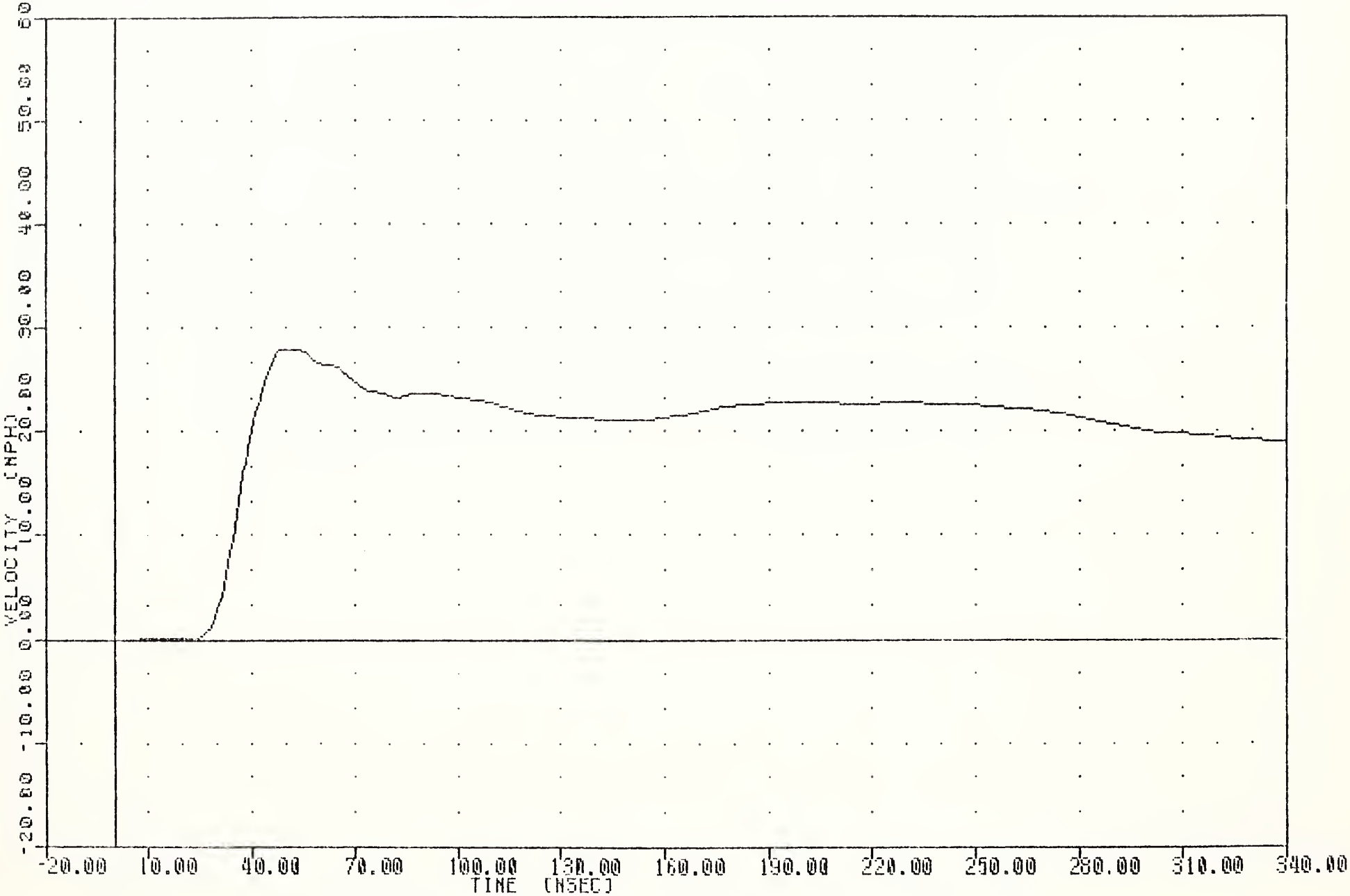
MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LOWER SPINE RESULTANT USING T12YGD

VRT , 850710 PLOT DATE 16-JUL-85 12:20:12
SI PROTECTION PROD VEH
85191000000 FILTER = NSAI 136/ 189/ -50
T12YV4 MIN, MAX VALUES = -0.02@ 5.62 , 26.56 @ 49.37

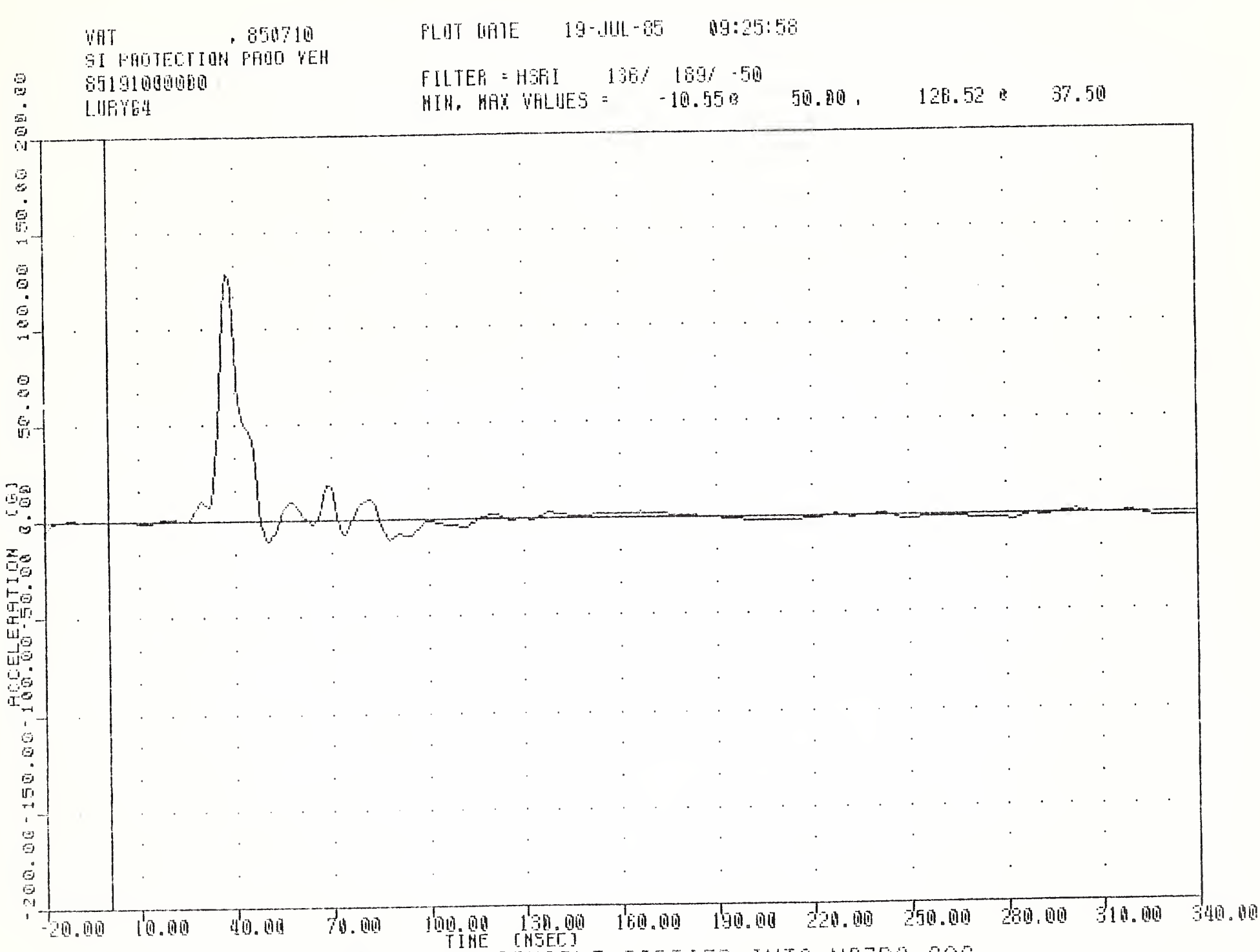


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING T12YG4

VAT , 850710 PLOT DATE 16-JUL-85 12:20:12
SI PROTECTION PROD VEH
85191000000 FILTER = HSAI 136/ 189/ -50
T12YVD MIN, MAX VALUES = -0.09@ -8.13, 27.99 @ 49.37

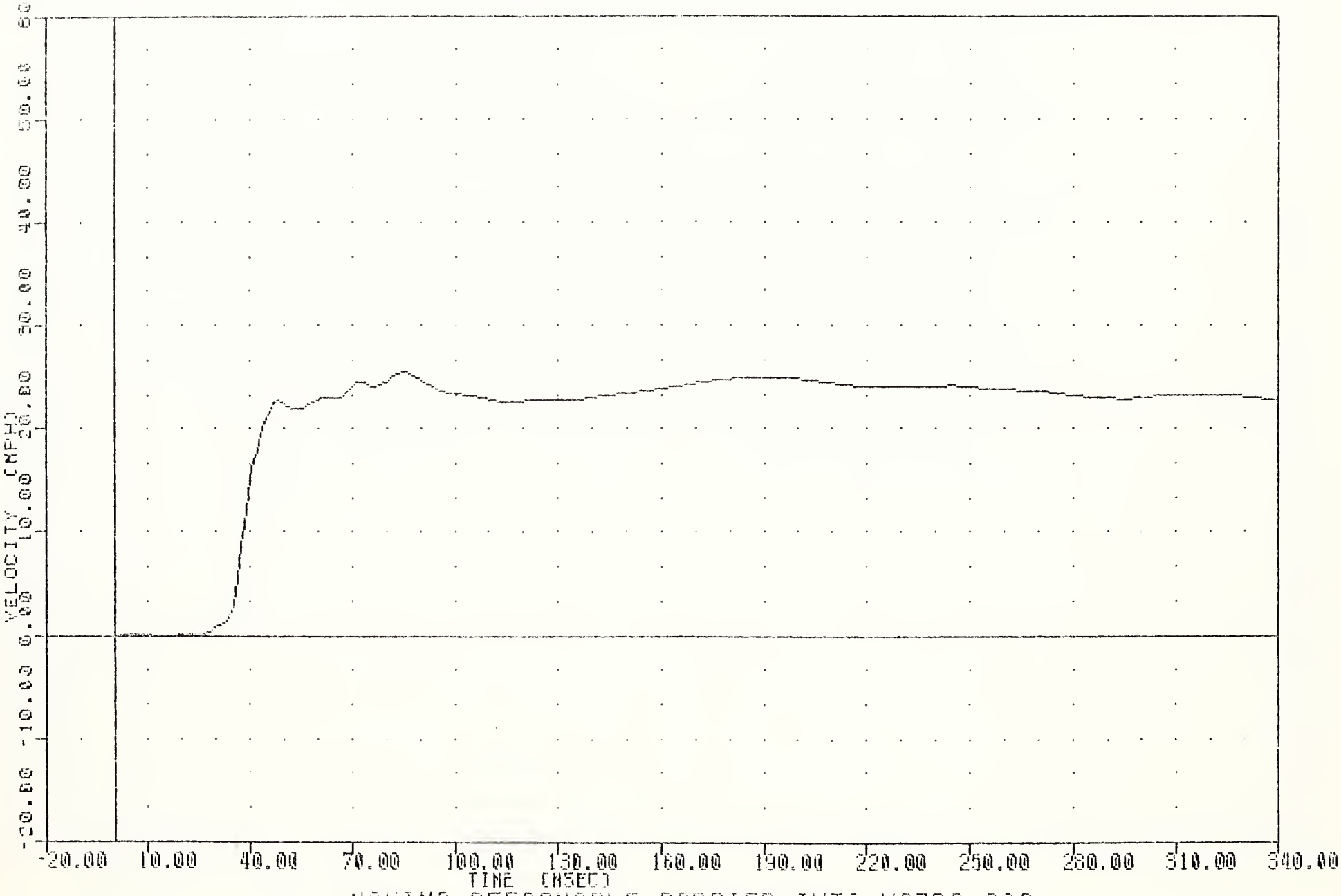


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING T12YGD

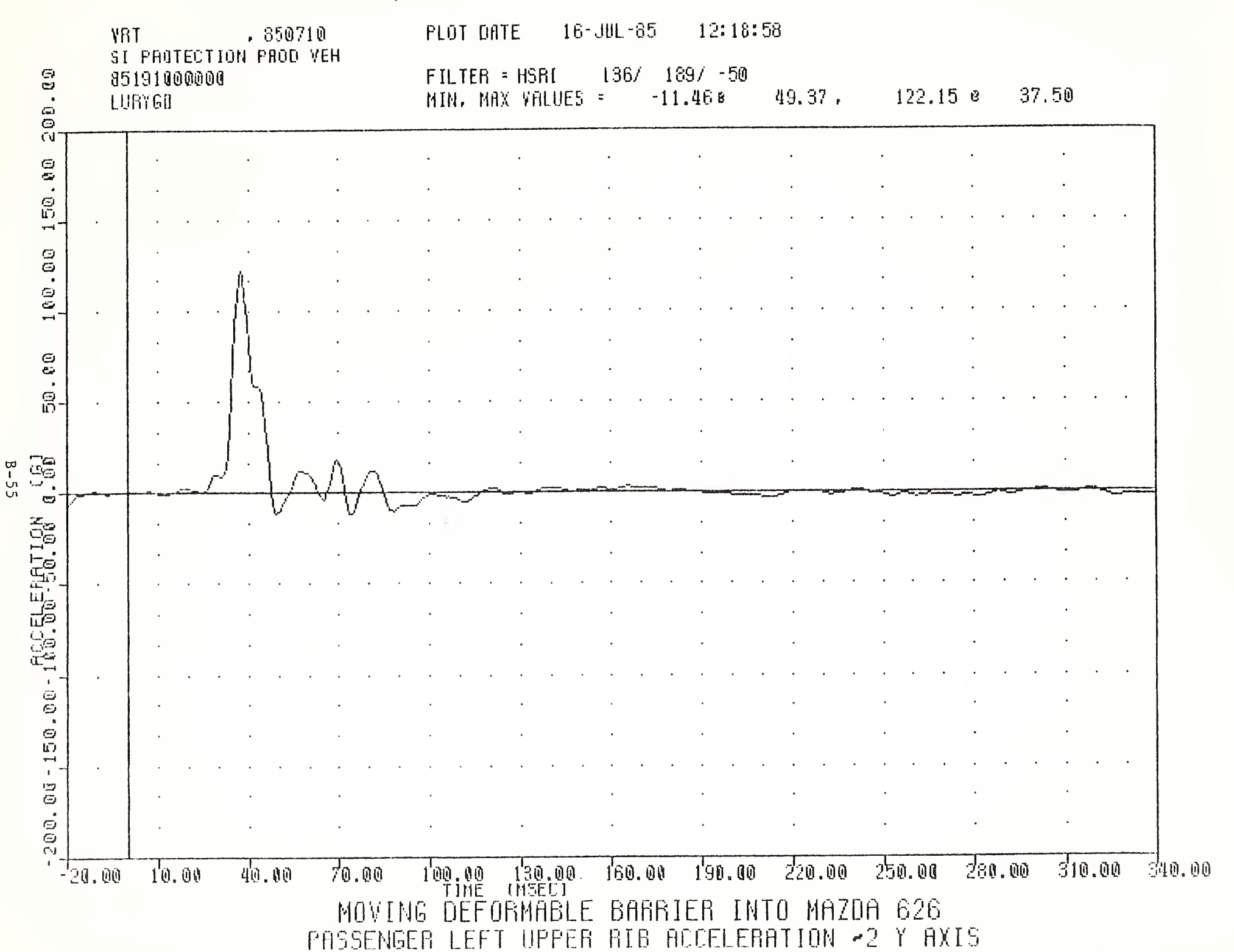


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LEFT UPPER RIB ACCELERATION Y AXIS

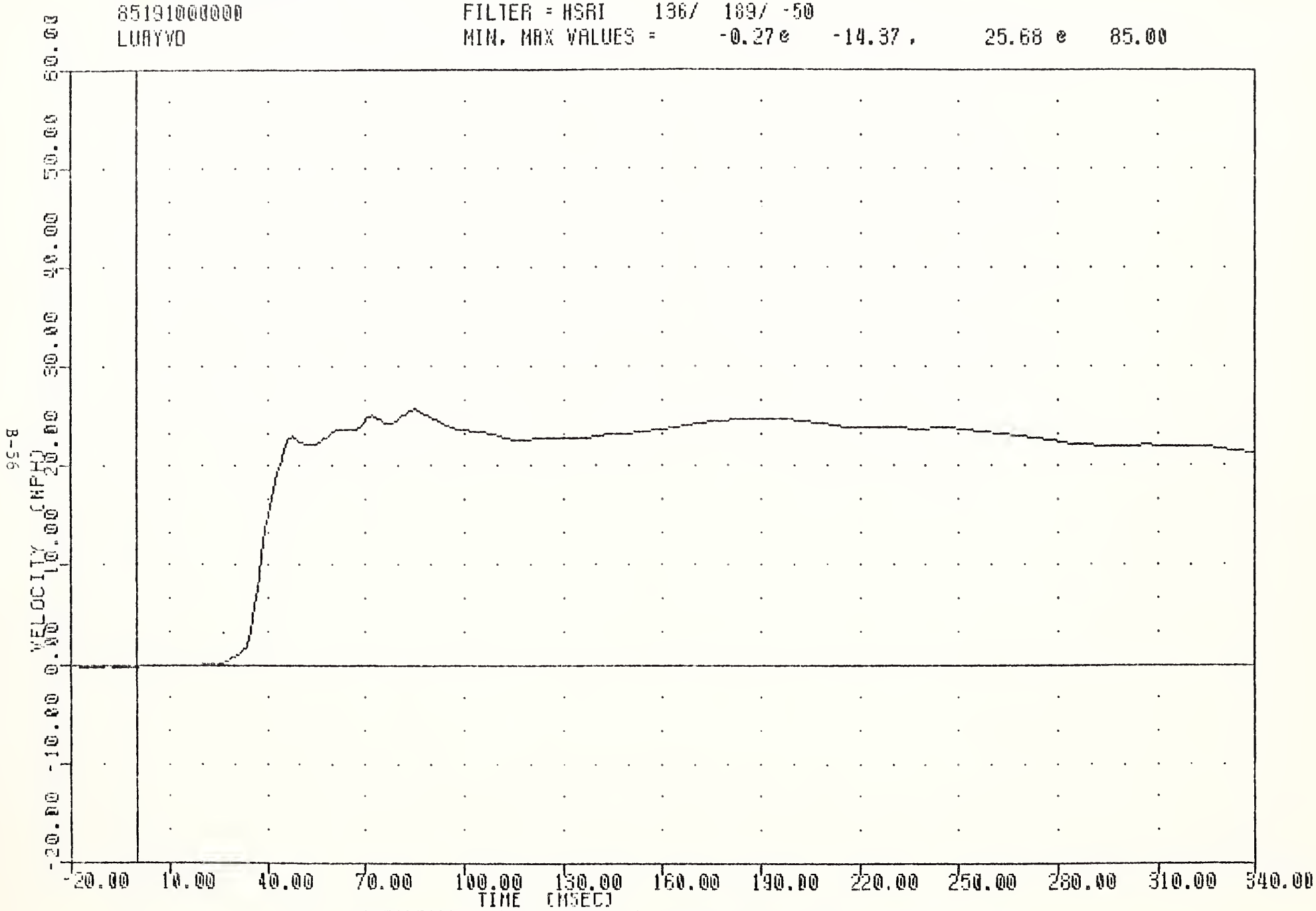
VAT , 850710 PLOT DATE 19-JUL-85 09:27:32
SI PROTECTION PROD VEH
8519100@0000 FILTER = NSAI 136/ 189/ -50
LURYV4 MIN, MAX VALUES = -0.16@ -16.25 , 25.53 @ 85.00



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LURYG4

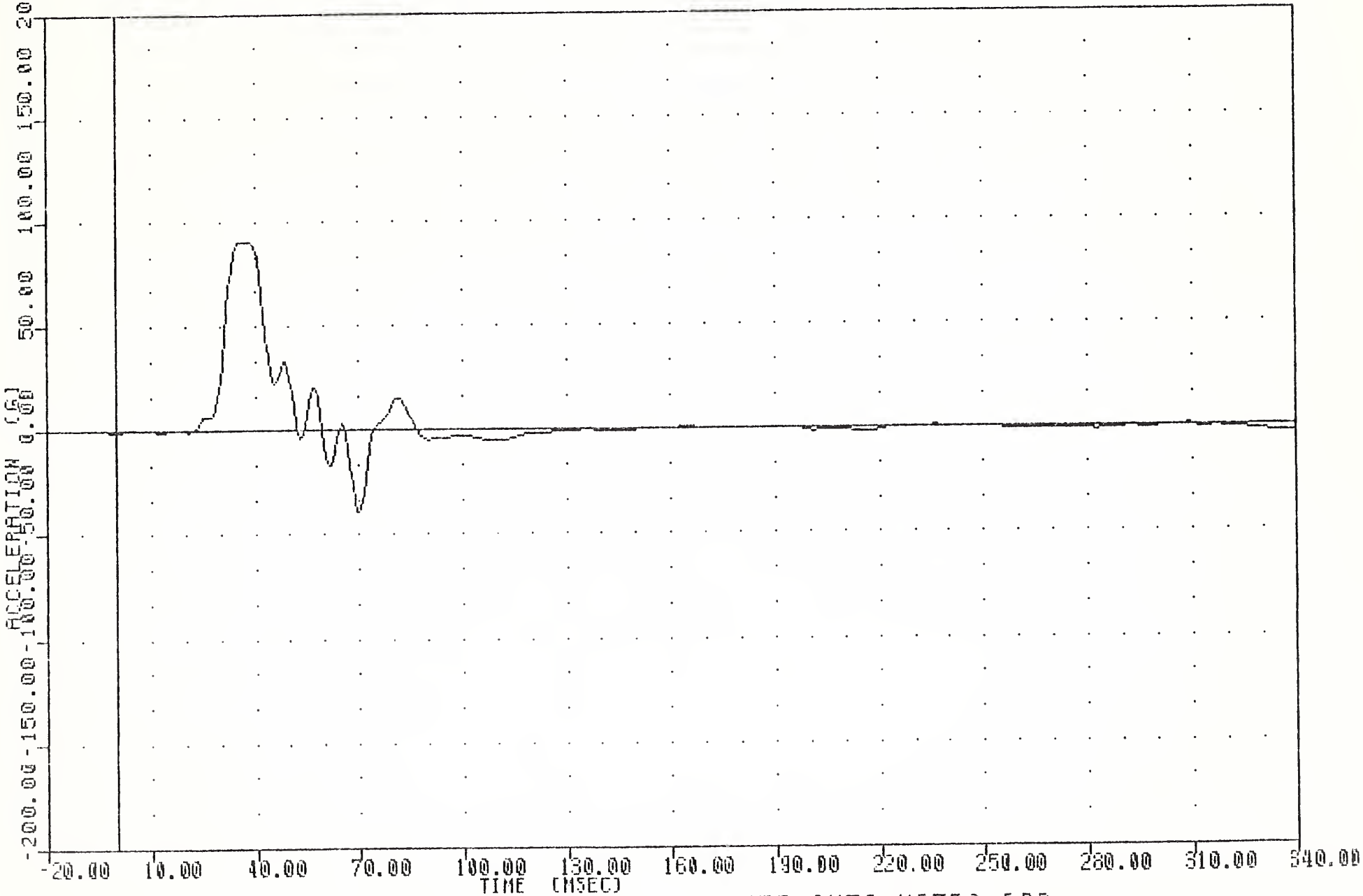


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LEFT UPPER RIB ACCELERATION -Z Y AXIS



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LURYGD

VRT , 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD VEH
85191000000 FILTER = HSRI 136/ 189/ -50
LLAYG4 MIN, MAX VALUES = -39.32 @ 70.00 , 90.80 @ 35.63

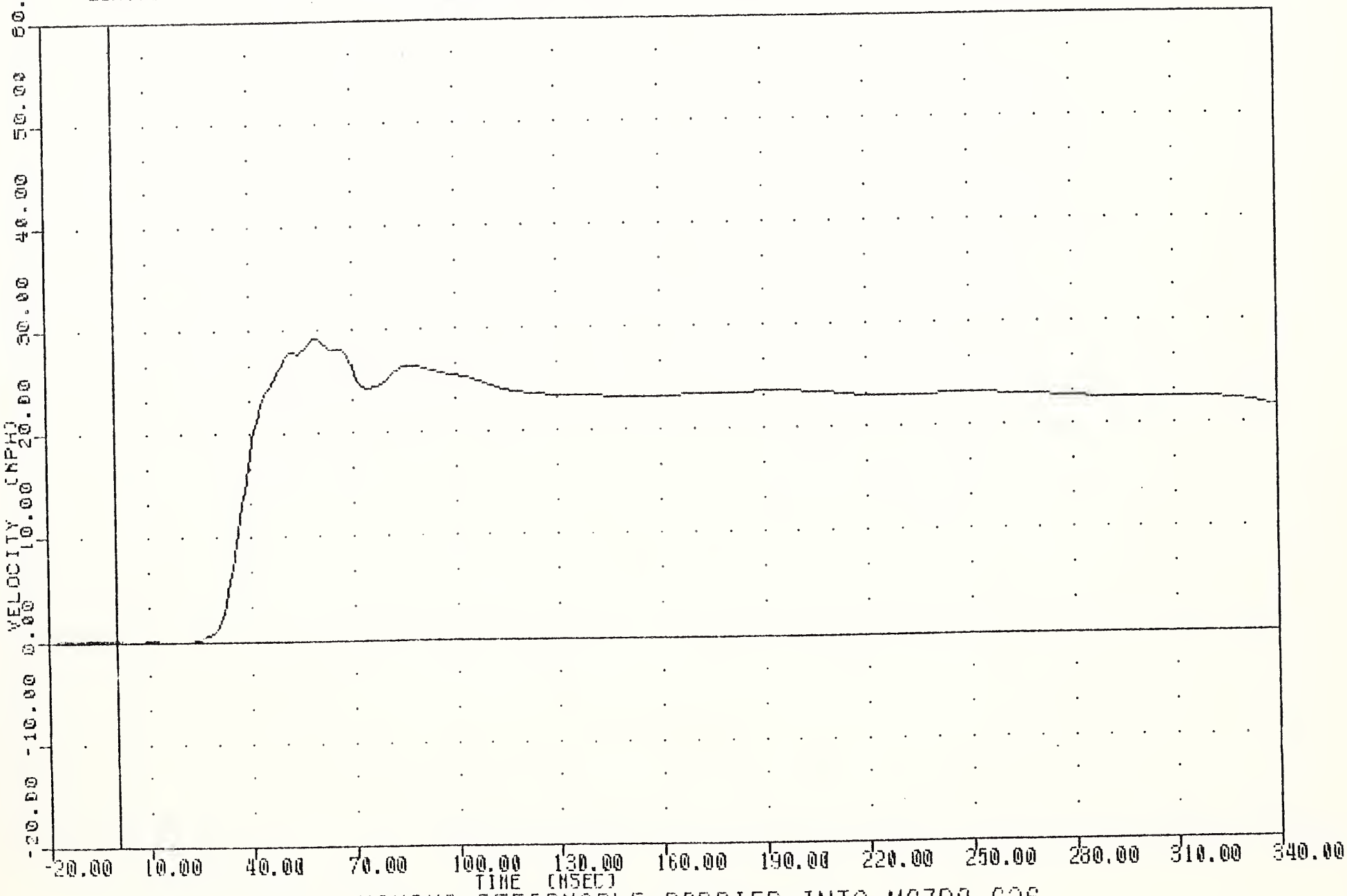


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LEFT LOWER RIB ACCELERATION Y AXIS

VRT , 850710
SI PROTECTION PROD VEH
851910000000
LLRYY4

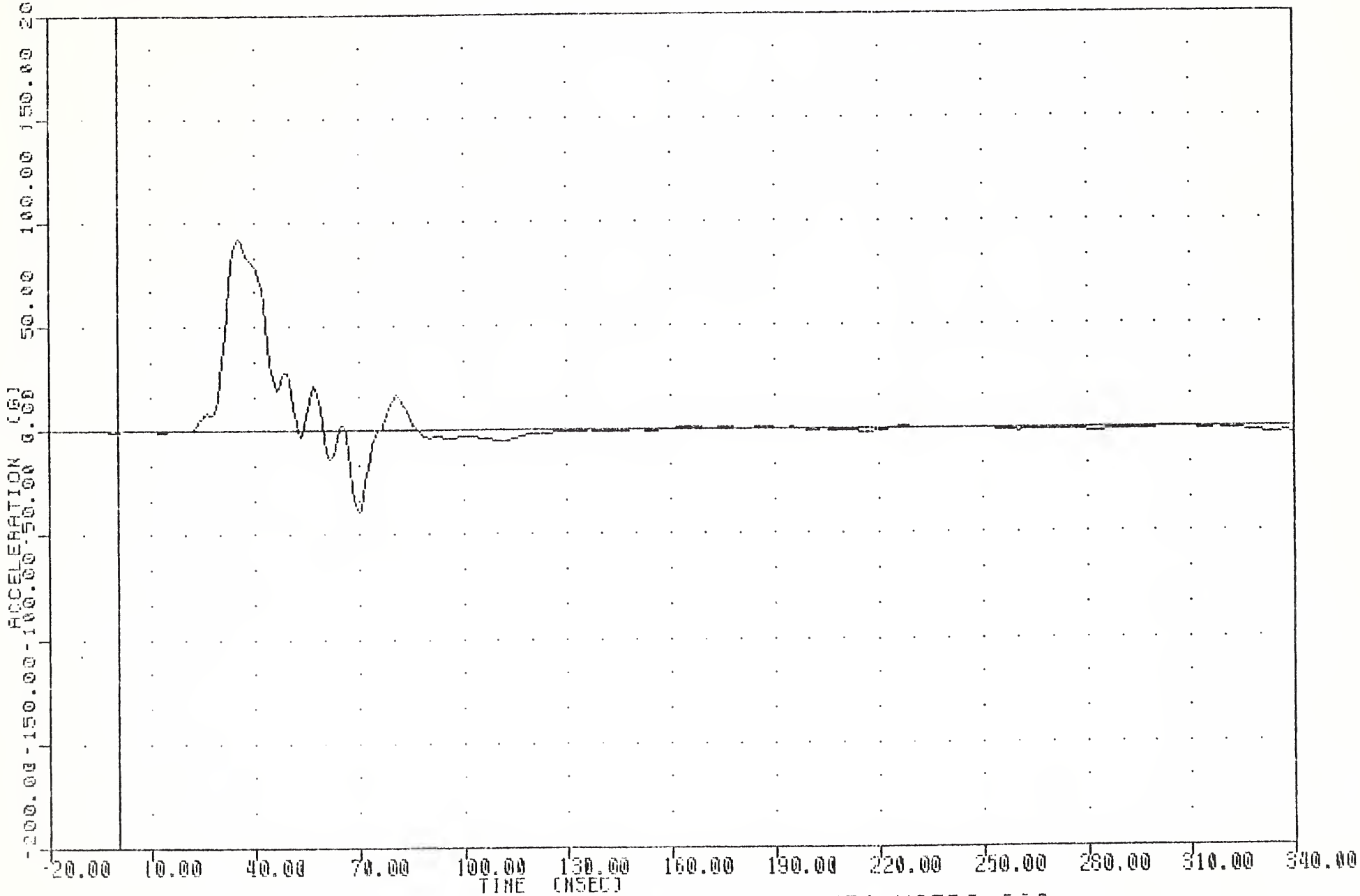
PLOT DATE 16-JUL-85 12:20:12

FILTER = HSRI 136/ 189/ -50
MIN, MAX VALUES = -0.02 @ 15.63 , 29.21 @ 59.38



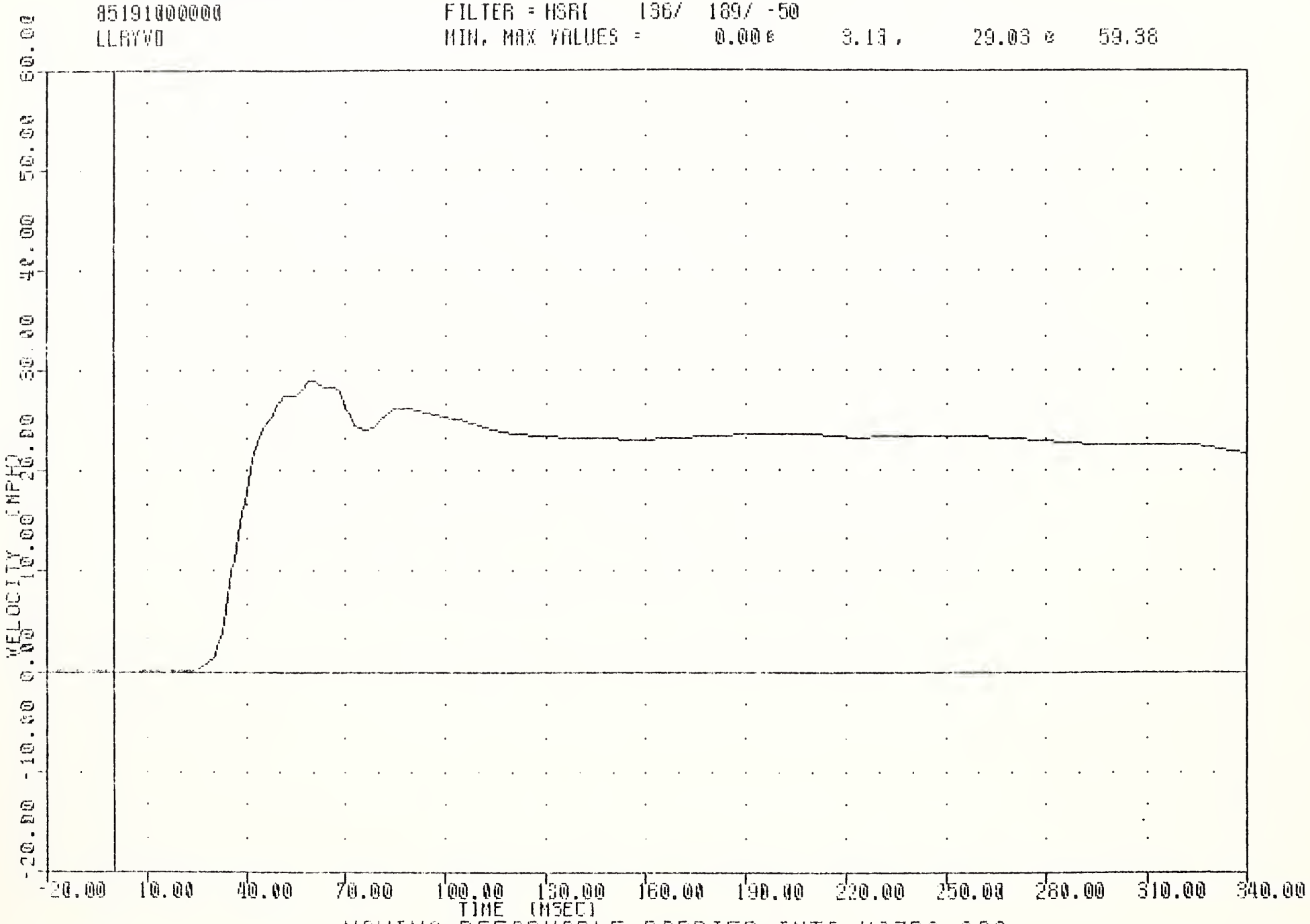
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LLRYG4

VAT . 850710 PLOT DATE 16-JUL-85 12:18:58
SI PROTECTION PROD YEH
851910@0000 FILTER = HSRI 136/ 189/ -50
LLRYBD MIN, MAX VALUES = -38.95 @ 70.00 , 92.88 @ 35.00



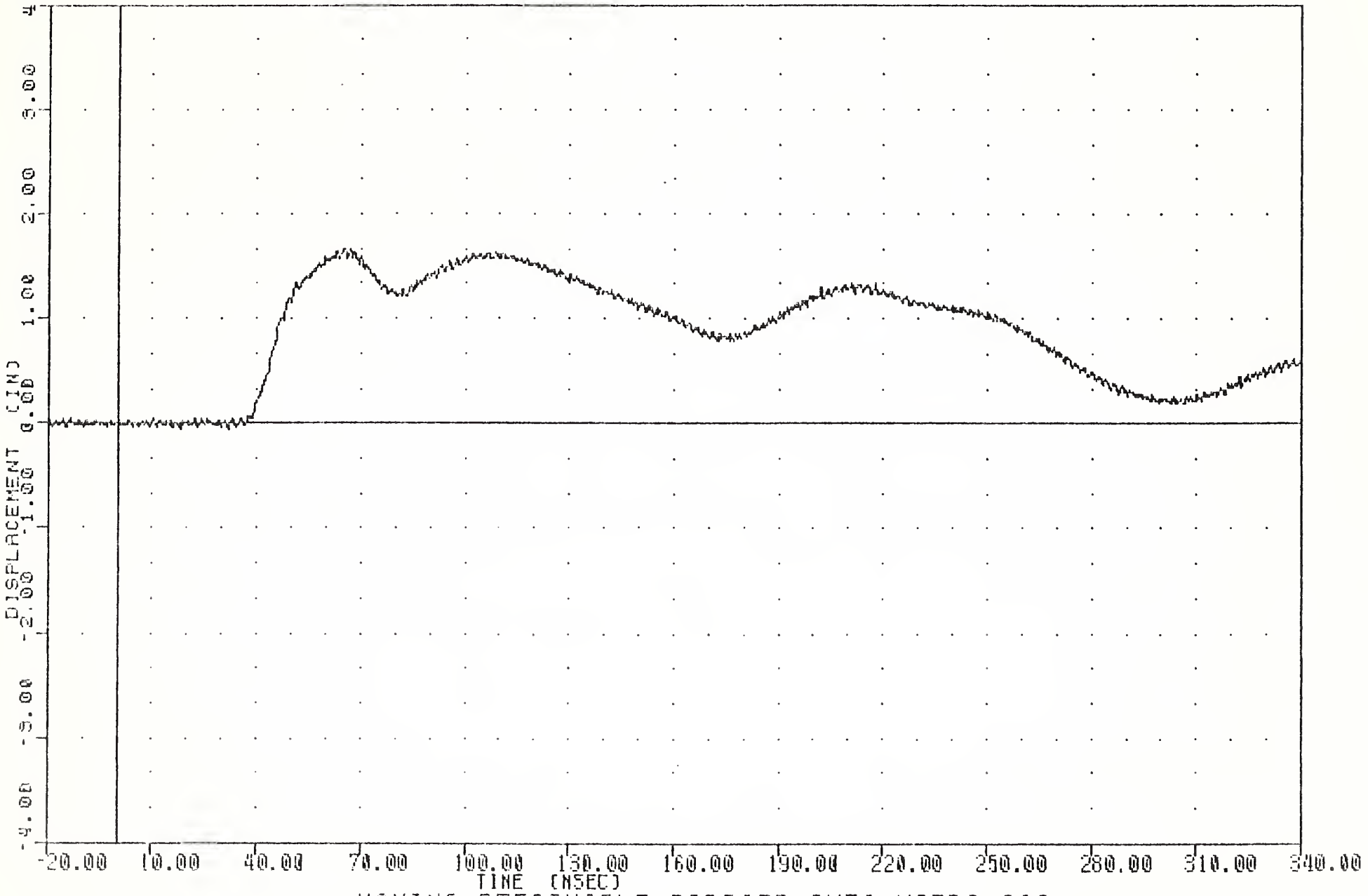
MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LEFT LOWER RIB ACCELERATION #2 Y AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:20:12
SI PROTECTION PROD VEH
851910@@@@@ FILTER = HSAI 136/ 189/ -50
LLAYVD MIN, MAX VALUES = 0.00@ 3.13, 29.03@ 59.38



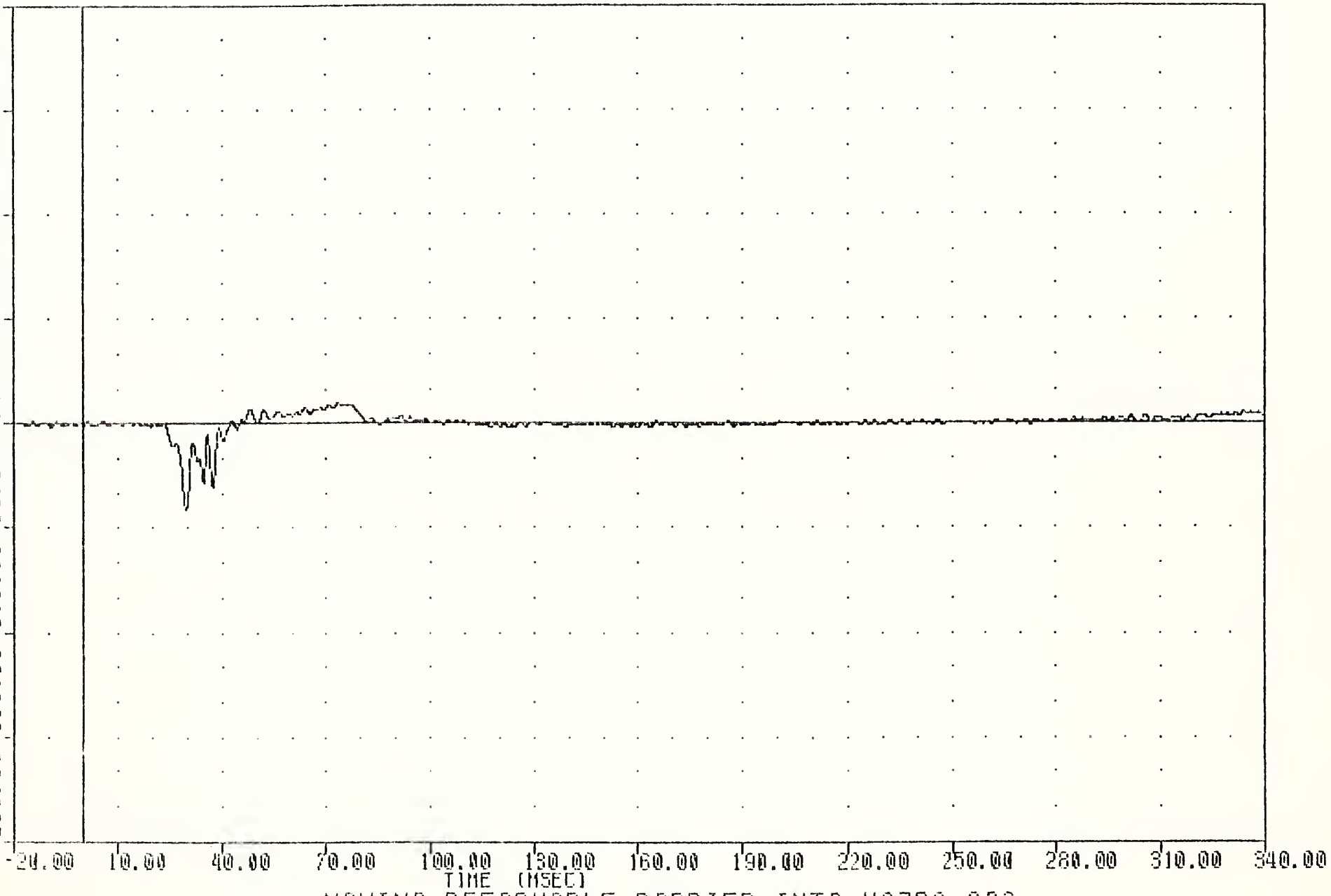
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LLAYGD

VAT , 850710 PLOT DATE 16-JUL-85 12:17:53
SI PROTECTION PROD VEH
85191000060 FILTER = ALPF 1650/ 5217/ -40
LATY04 MIN, MAX VALUES = -0.06 @ 31.68 , 1.67 @ 65.25

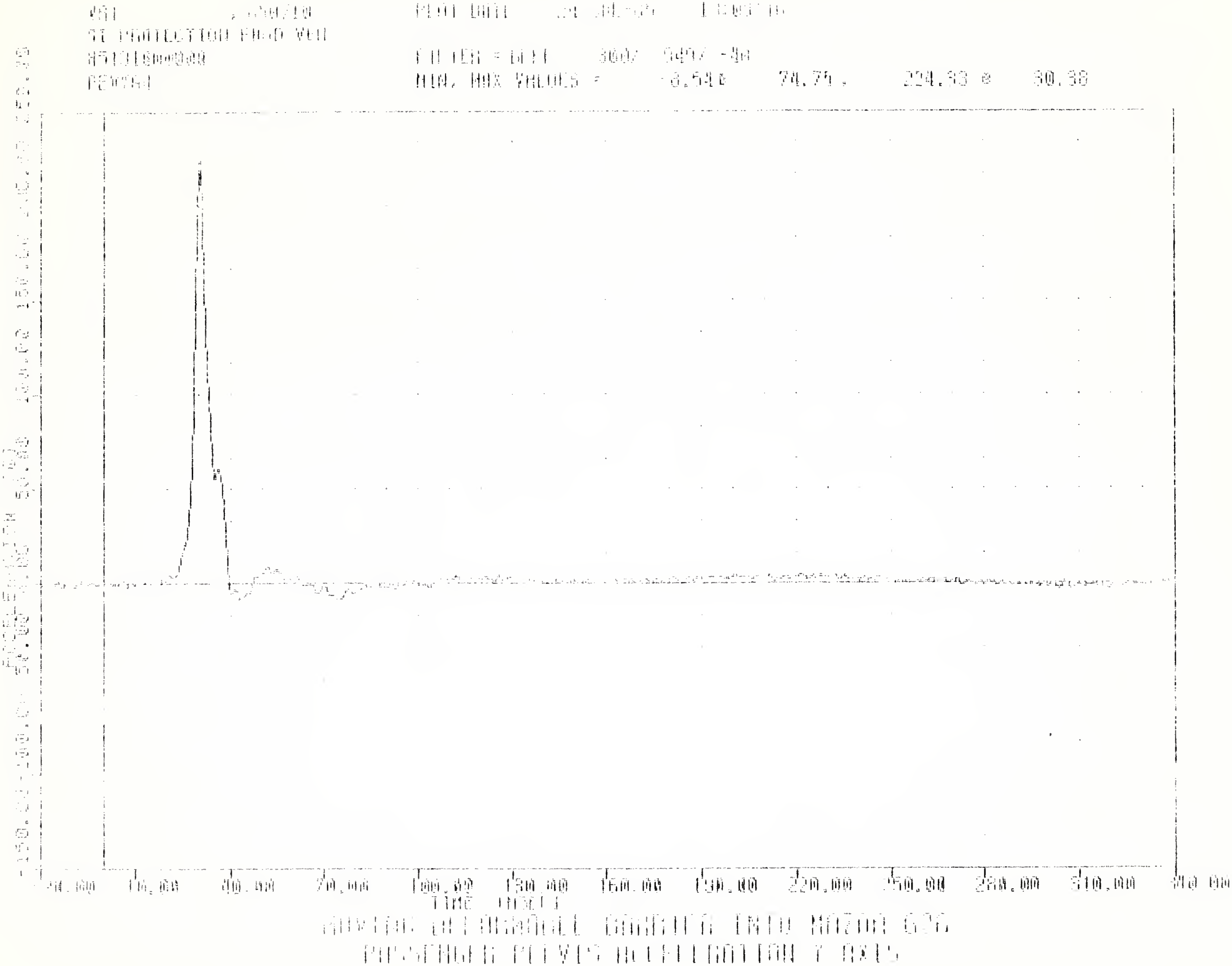


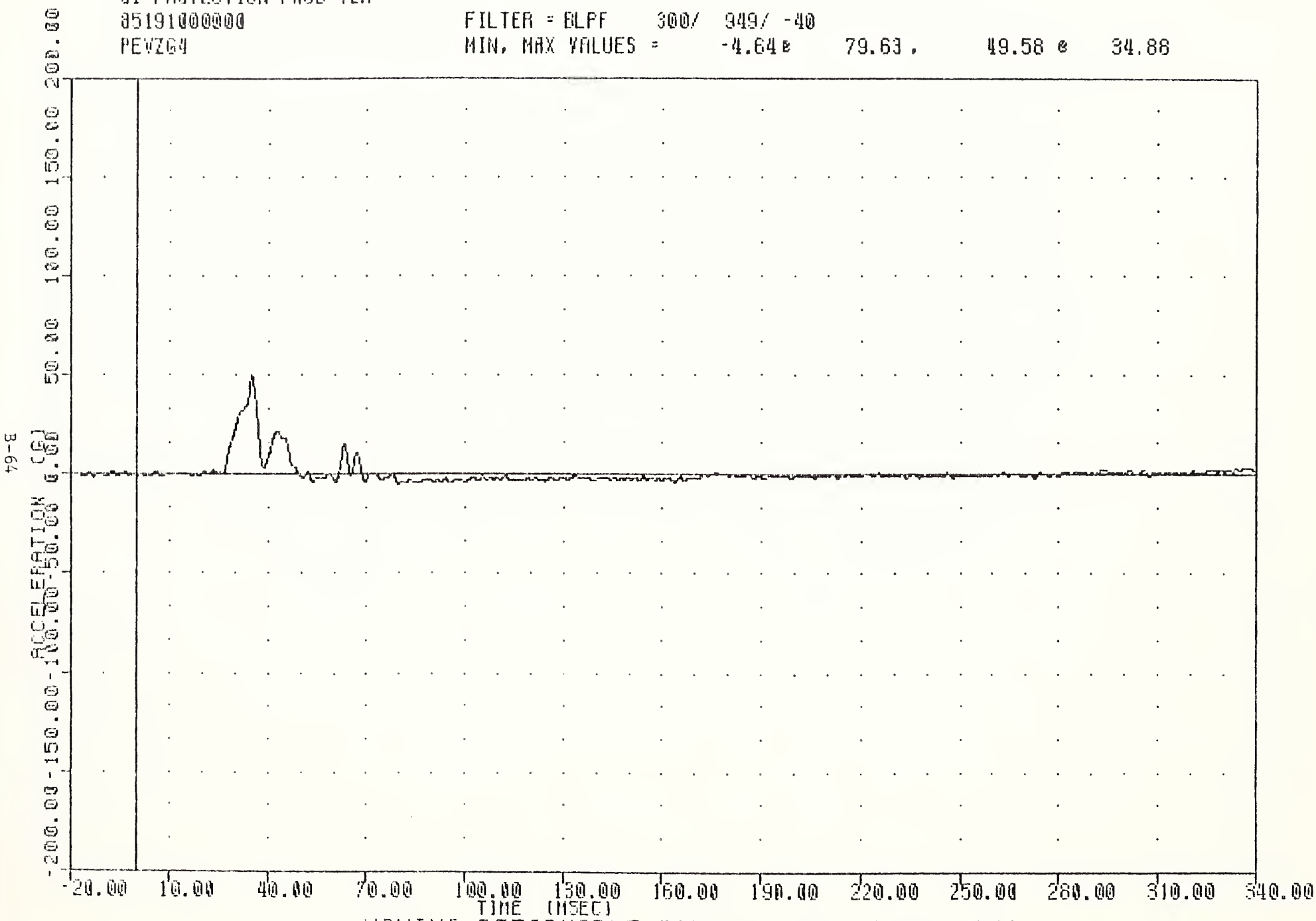
MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER LEFT RIB TO SPINE DISPLACEMENT INCHES

VRT , 850710 PLOT DATE 16-JUL-85 12:17:53
SI PROTECTION PROD VEH
851910000000 FILTER = BLPF 300/ 949/ -40
PEVXG4 MIN, MAX VALUES = -41.06 @ 29.63 , 9.47 @ 73.50

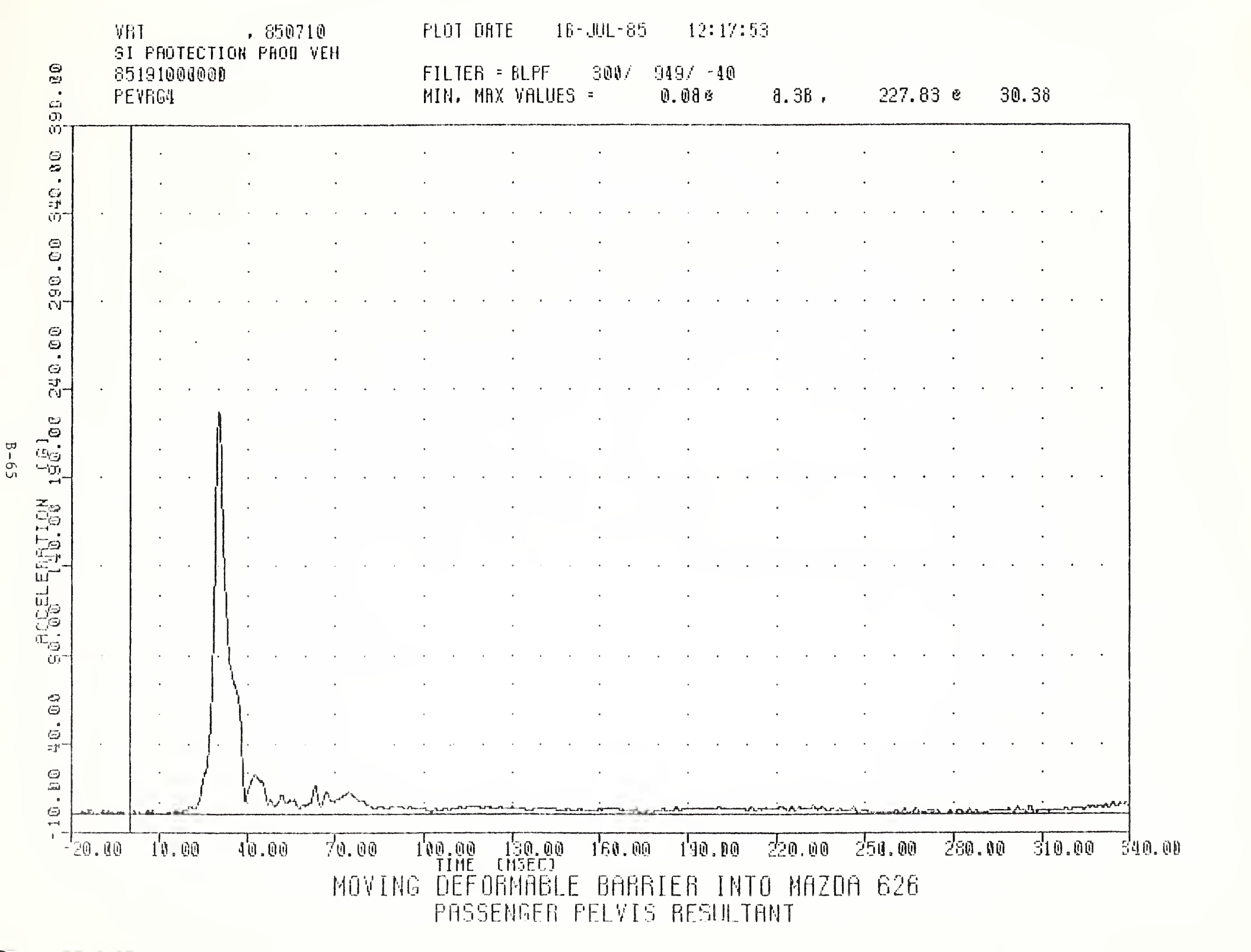


MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER PELVIS ACCELERATION X AXIS

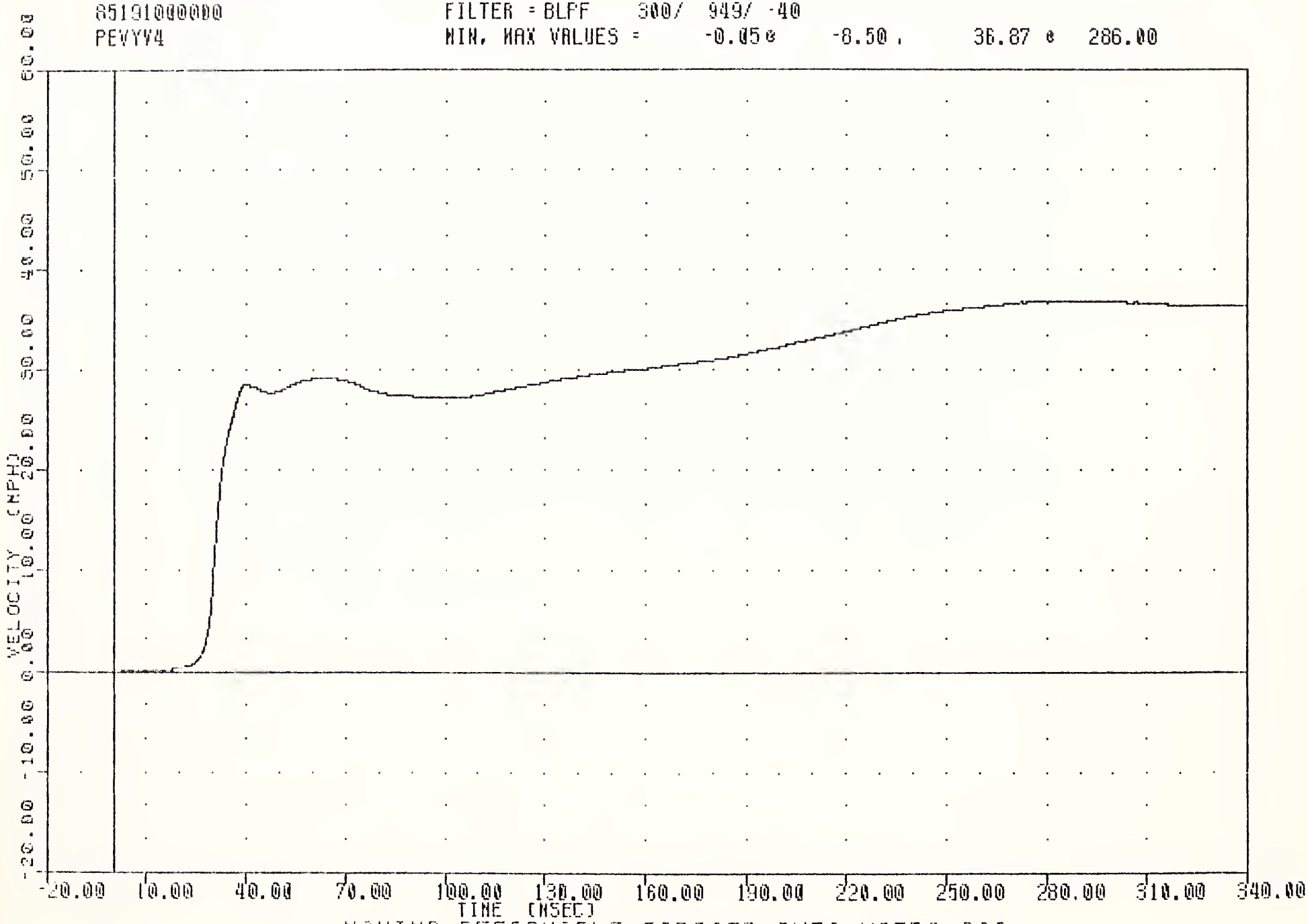

MIN, MAX VALUES =
74.75
30.38
TIME
100.00
130.00
160.00
220.00
280.00
310.00



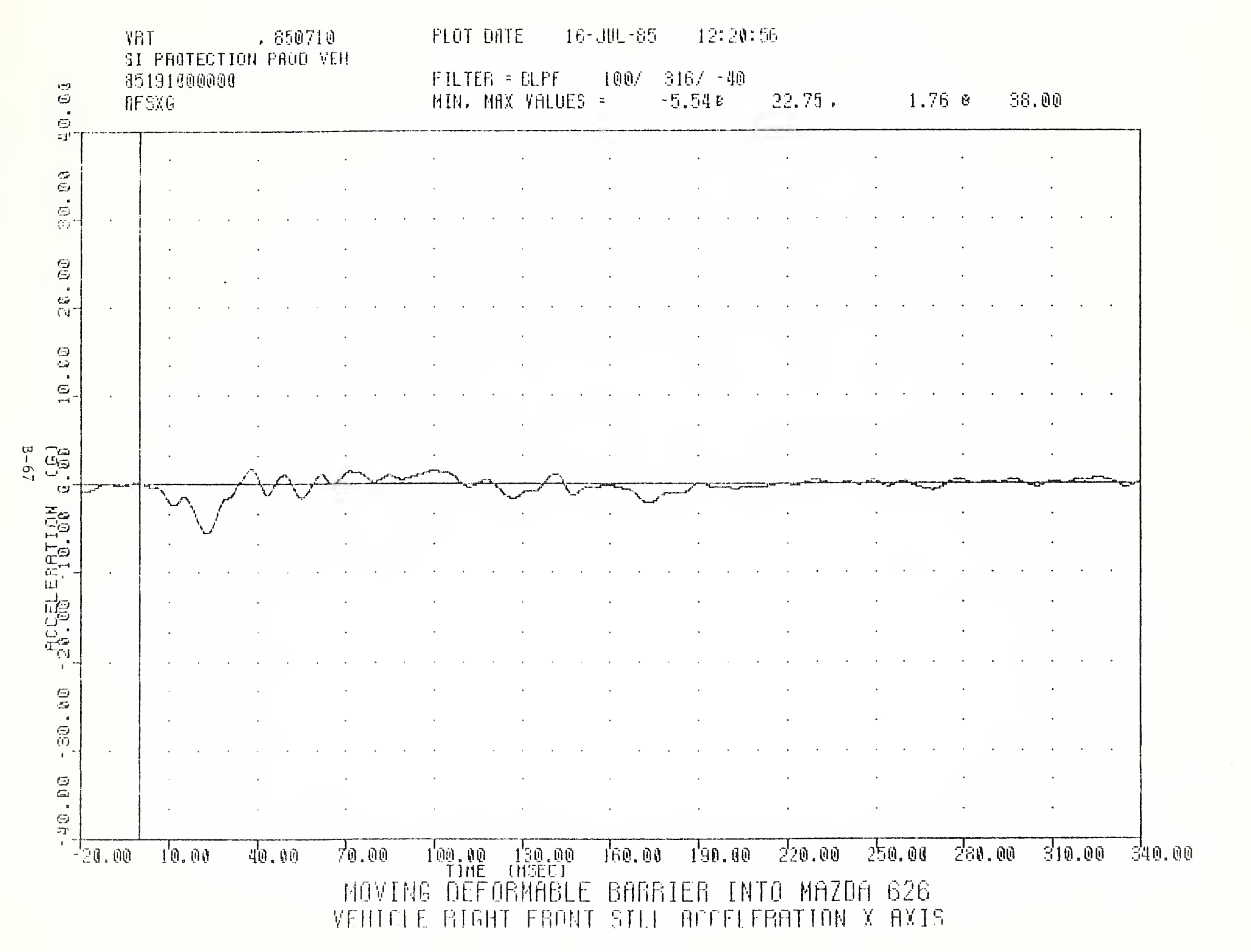
MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER PELVIS ACCELERATION Z AXIS


VRT , 850710
PLOT DATE 16-JUL-85 12:17:53
SI PROTECTION PROD VEH
85191000000
FILTER = BLPF 300/ 949/ -40
PEVRG4
MIN, MAX VALUES = 0.00@ 8.38 , 227.83 @ 30.38
ACCELERATION (G)
-10.00 40.00 90.00 140.00 190.00 240.00 290.00 340.00 390.00
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)
MOVING DEFORMABLE BARRIER INTO MAZDA 626
PASSENGER PELVIS RESULTANT

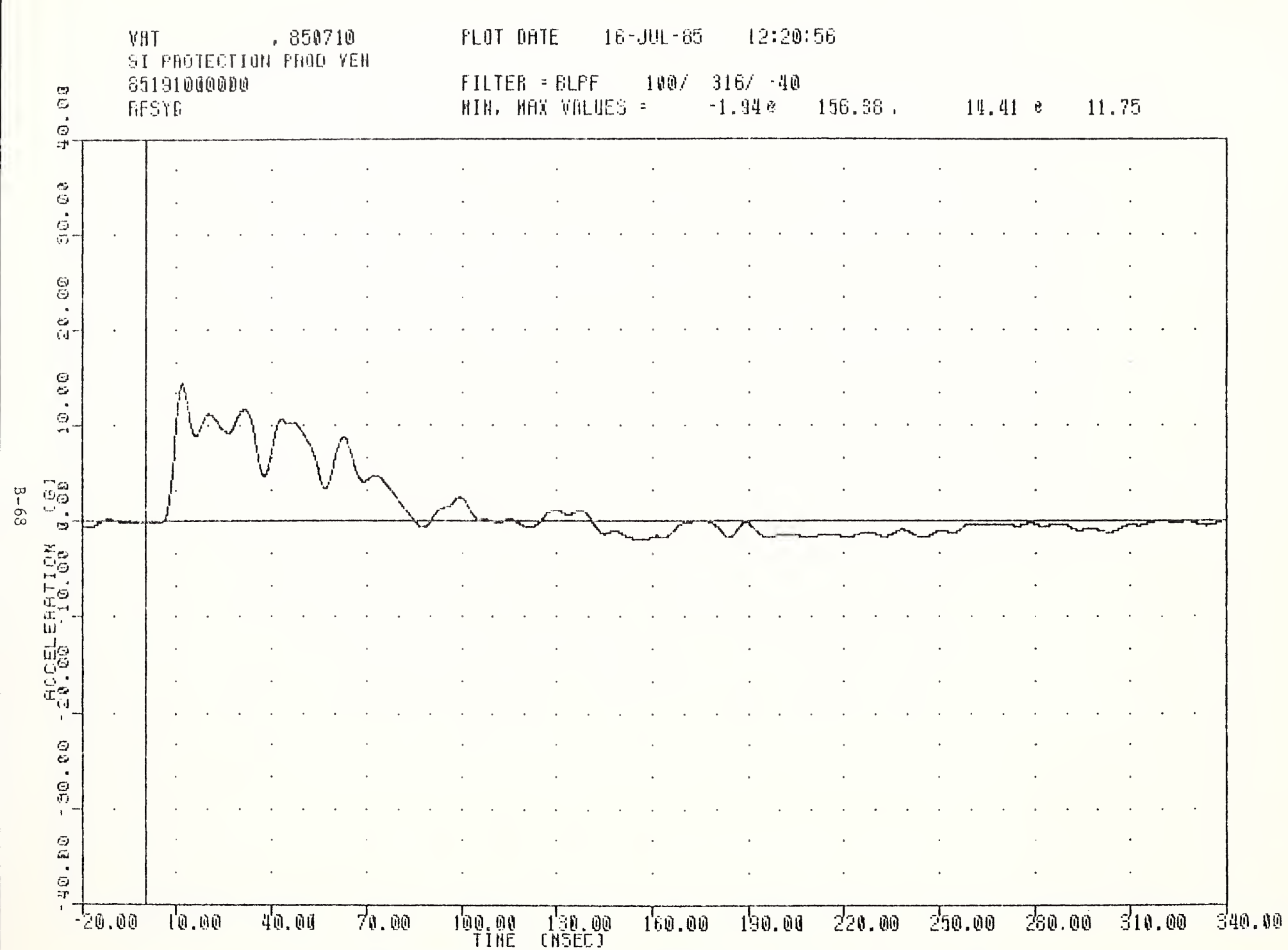
VAT , 850710 PLOT DATE 16-JUL-85 12:17:53
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
PEVYY4 MIN, MAX VALUES = -0.05 @ -8.50 , 36.87 @ 286.00



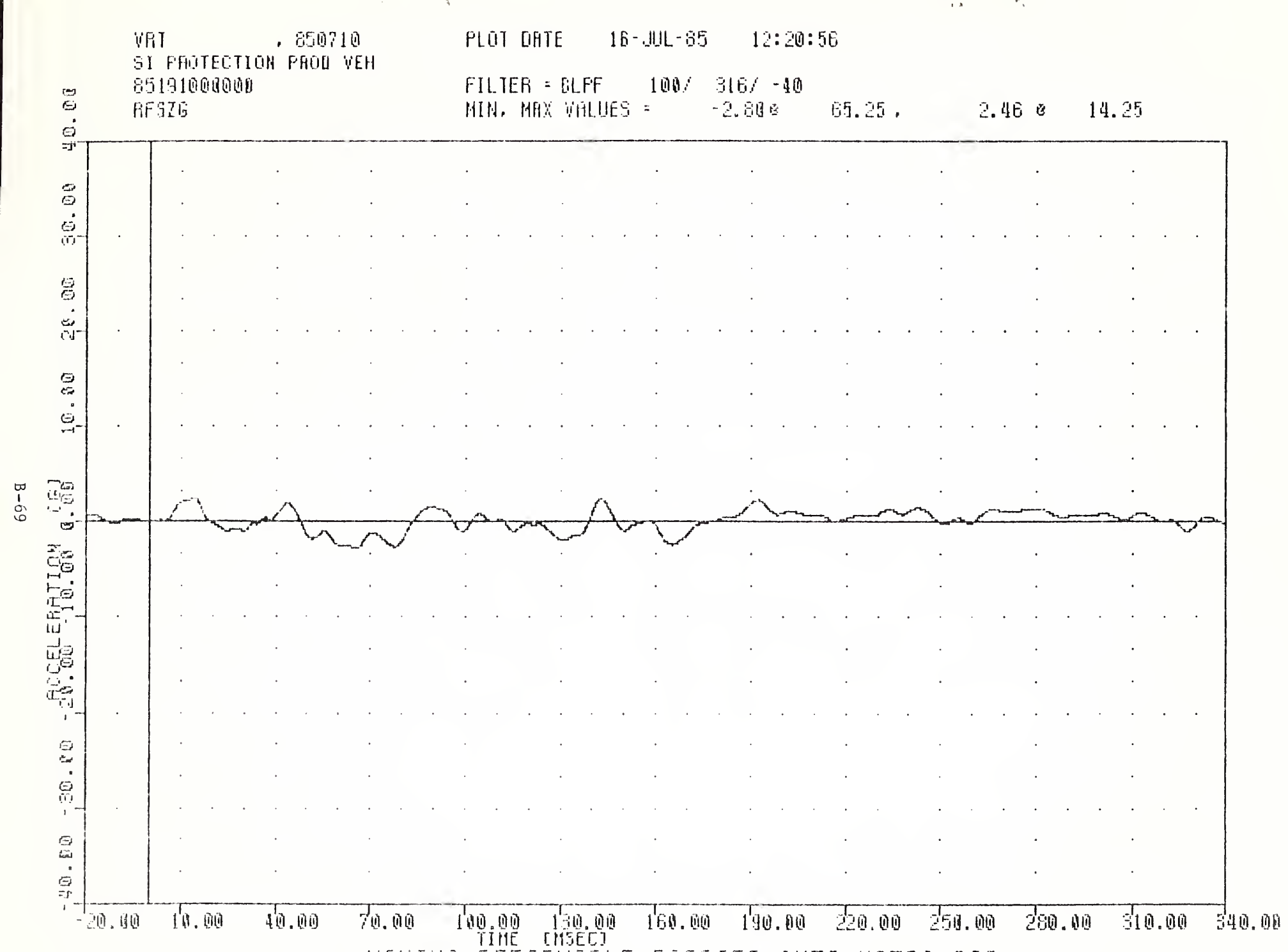
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING PEVYG4



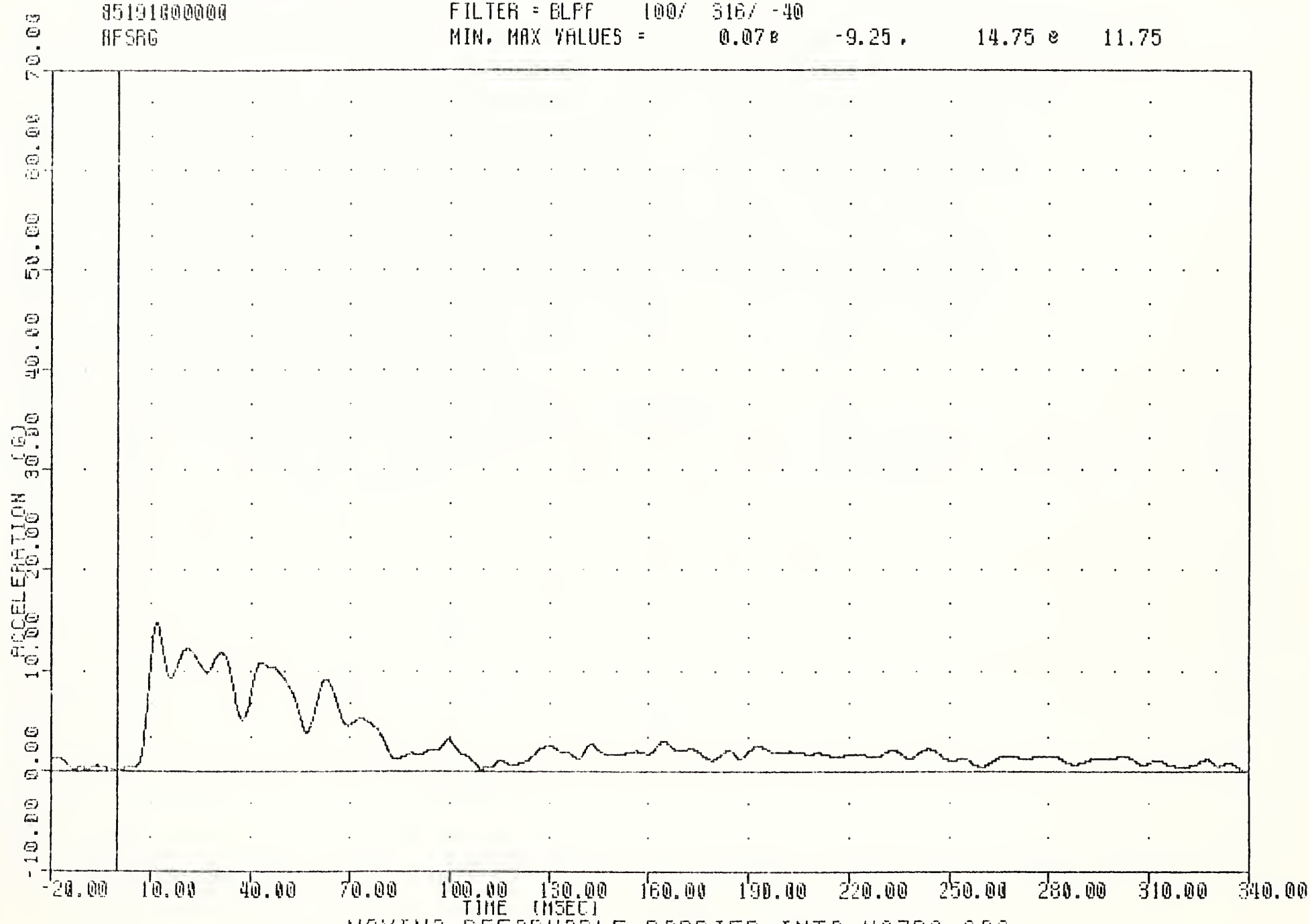
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE RIGHT FRONT STIL ACCELERATION X AXIS



MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE RIGHT FRONT SILL ACCELERATION Y AXIS

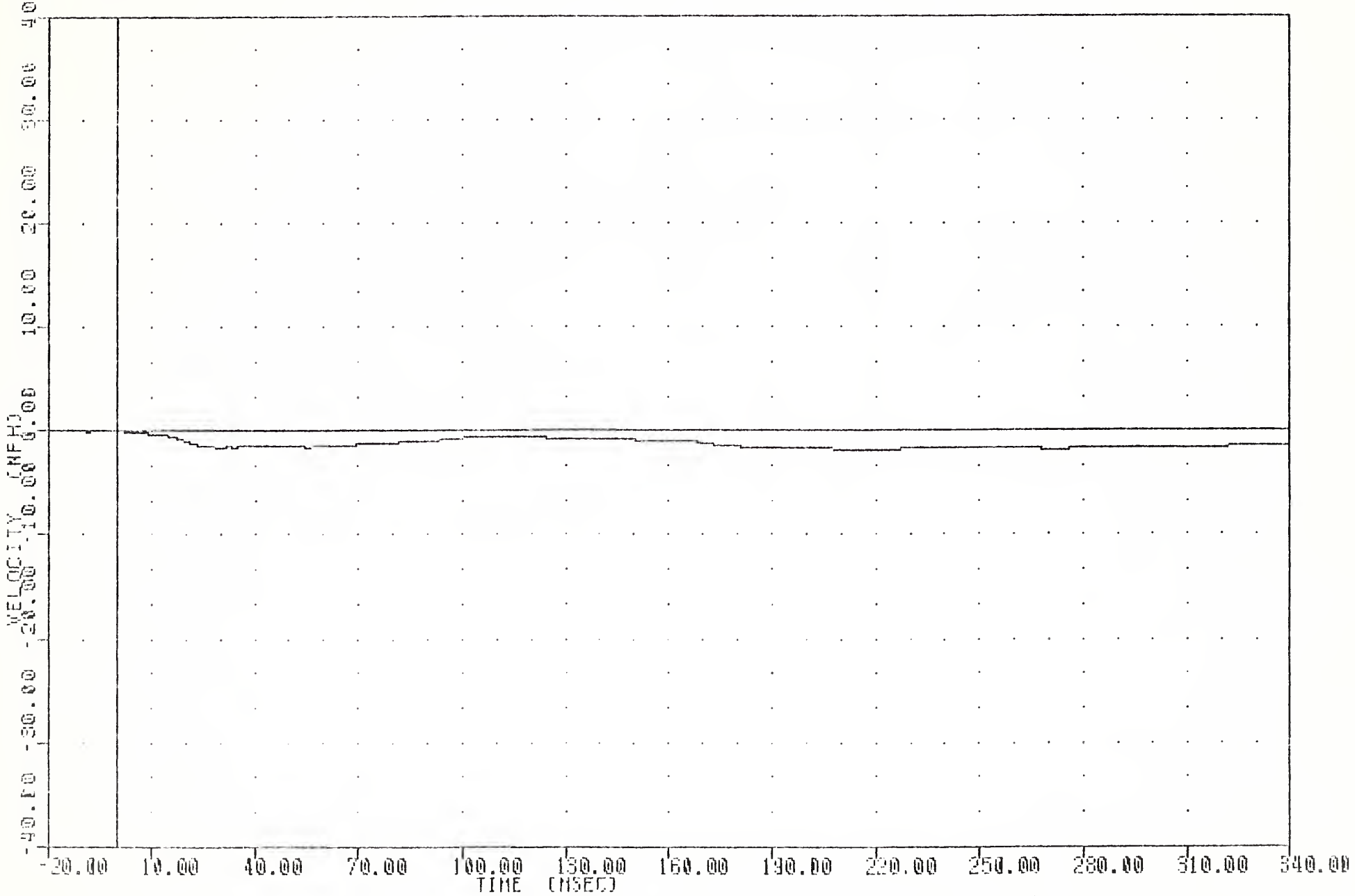


MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE RIGHT FRONT SILL ACCELERATION Z AXIS

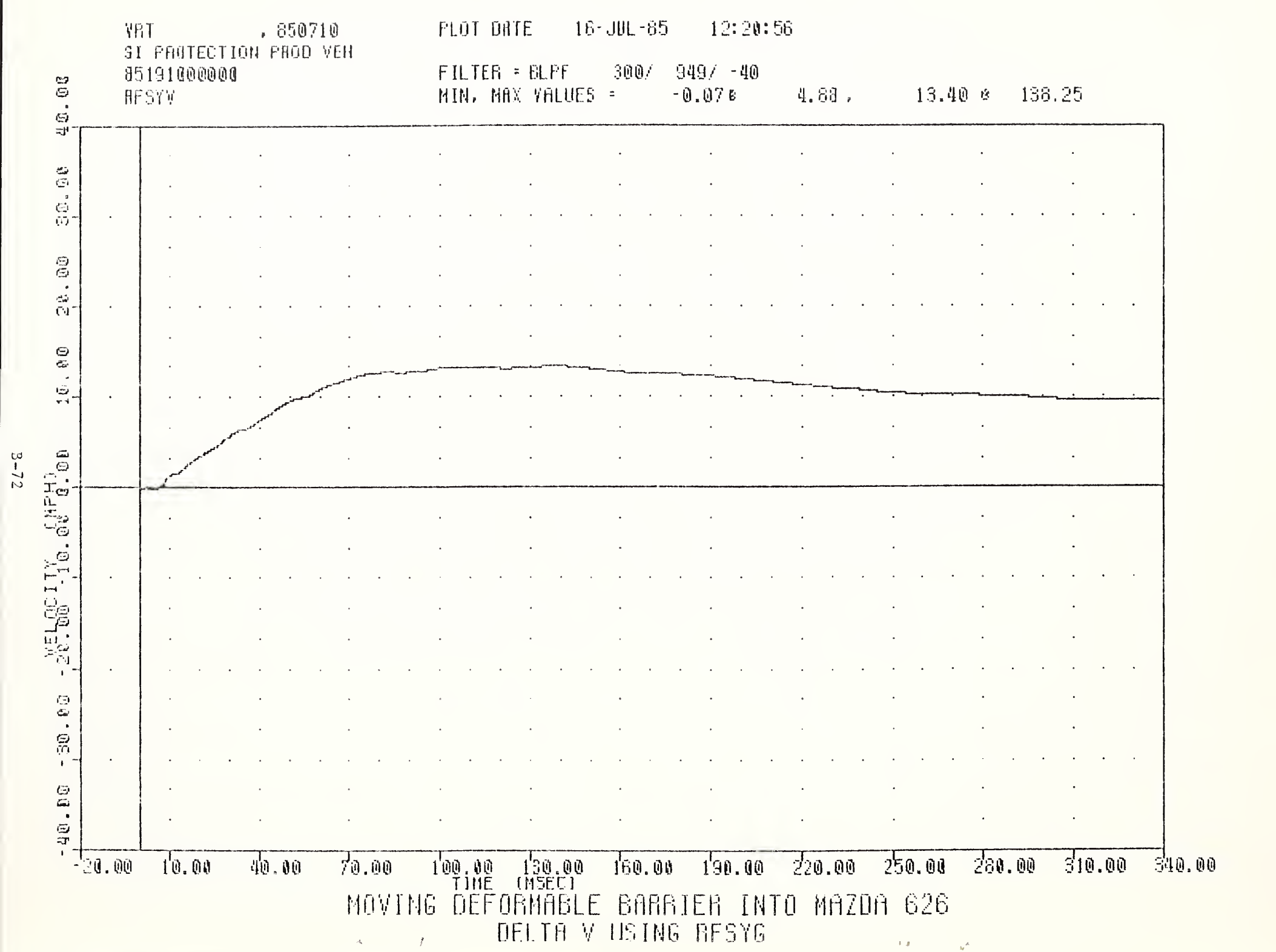


MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE RIGHT FRONT SILL RESULTANT

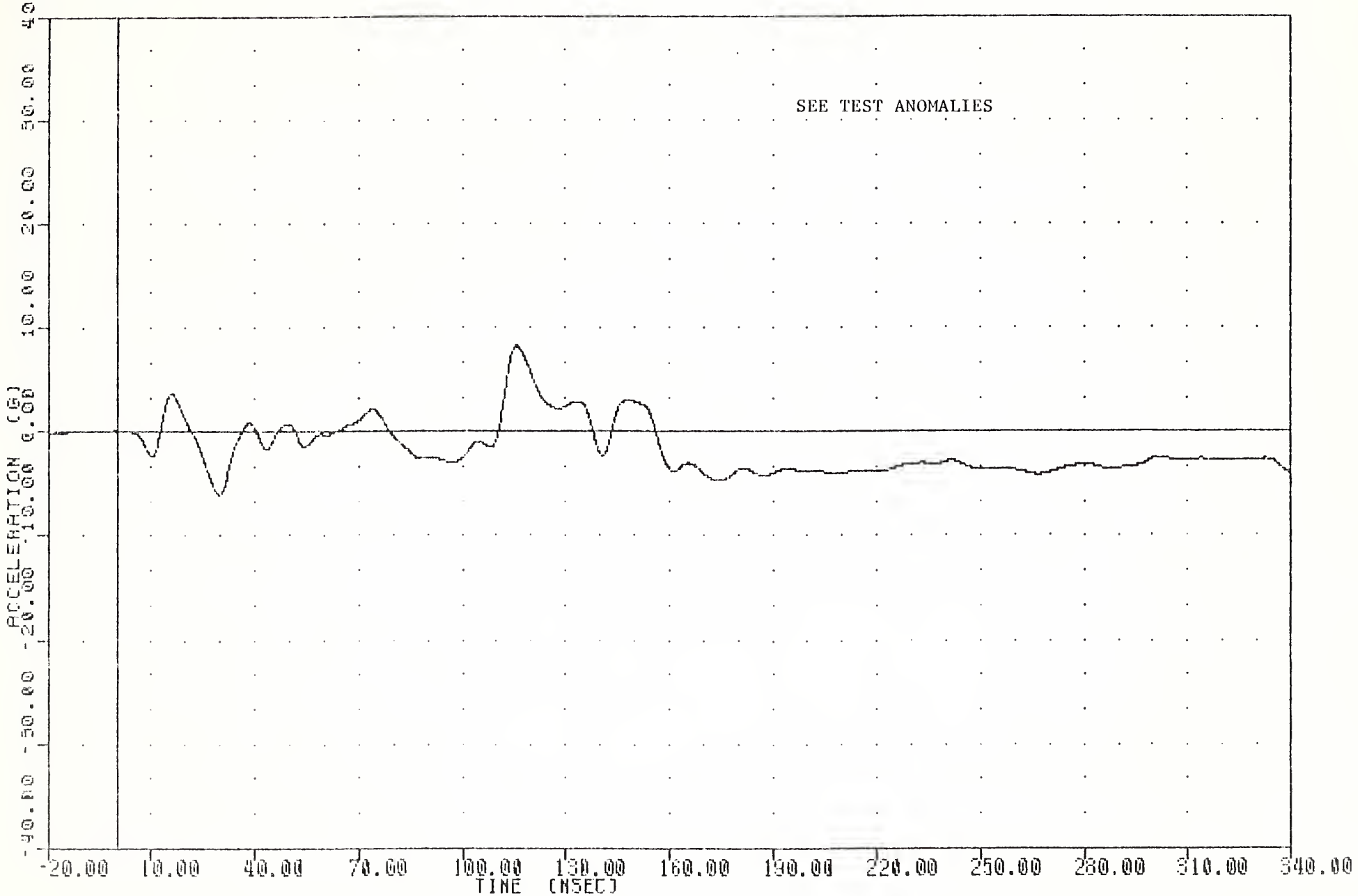
VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
RFSXV MIN, MAX VALUES = -1.79@ 270.88, 0.00@ -20.00



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING RFSXG

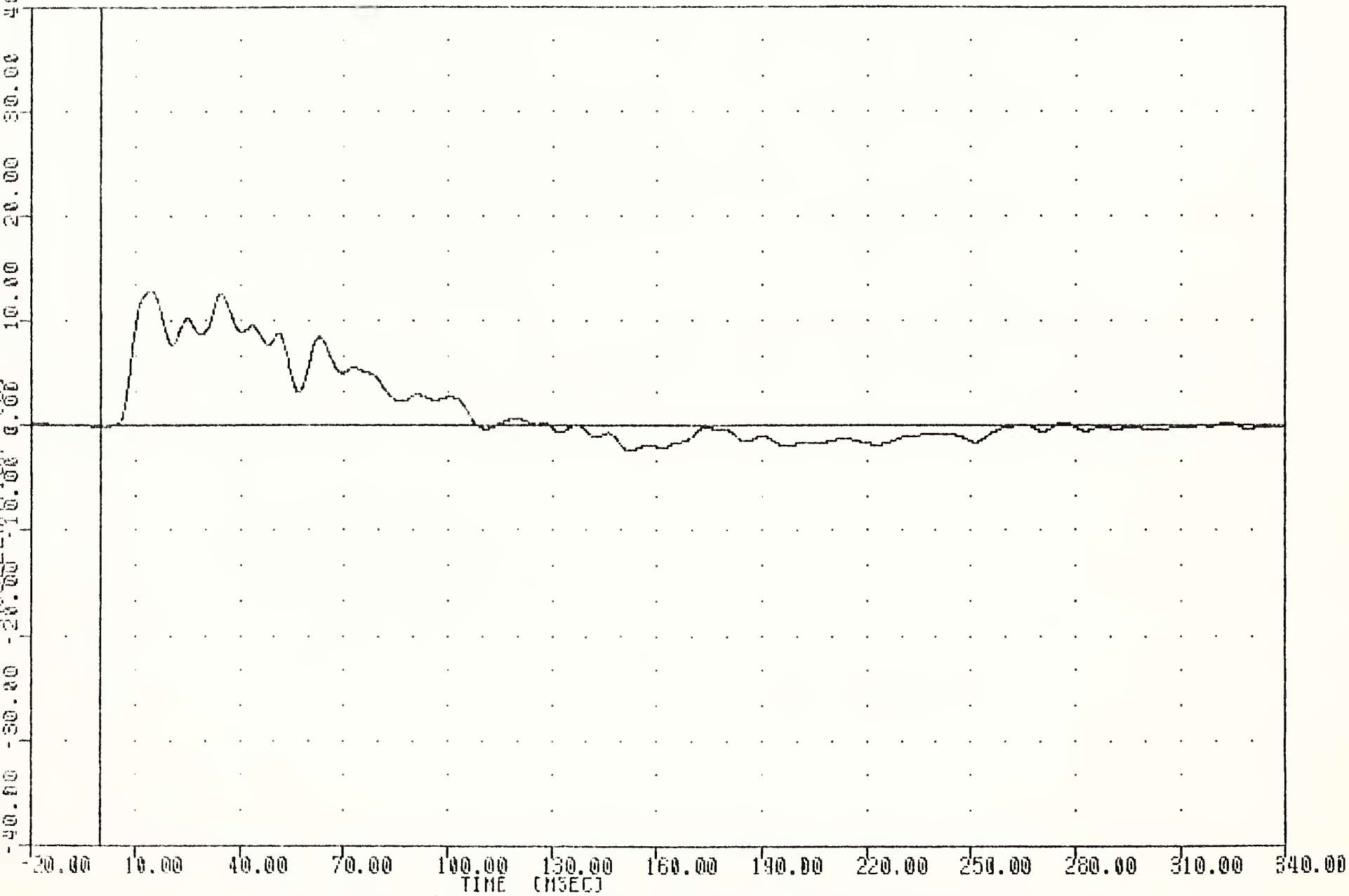

VRT , 850710
SI PROTECTION PROD VEH
8519100000
RFSYV
PLOT DATE 16-JUL-85 12:20:56
FILTER = BLPF 300/ 949/ -40
MIN, MAX VALUES = -0.07 @ 4.88 , 13.40 @ 138.25
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00
VELOCITY (MPH)
-20.00
10.00
40.00
70.00
100.00
130.00
160.00
190.00
220.00
250.00
280.00
310.00
340.00
TIME (MSEC)
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING RFSYG

VAT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
05191000000 FILTER = BLPF 100/ 316/ -40
RASX6 MIN, MAX VALUES = -6.05 @ 29.75 , 8.24 @ 115.88



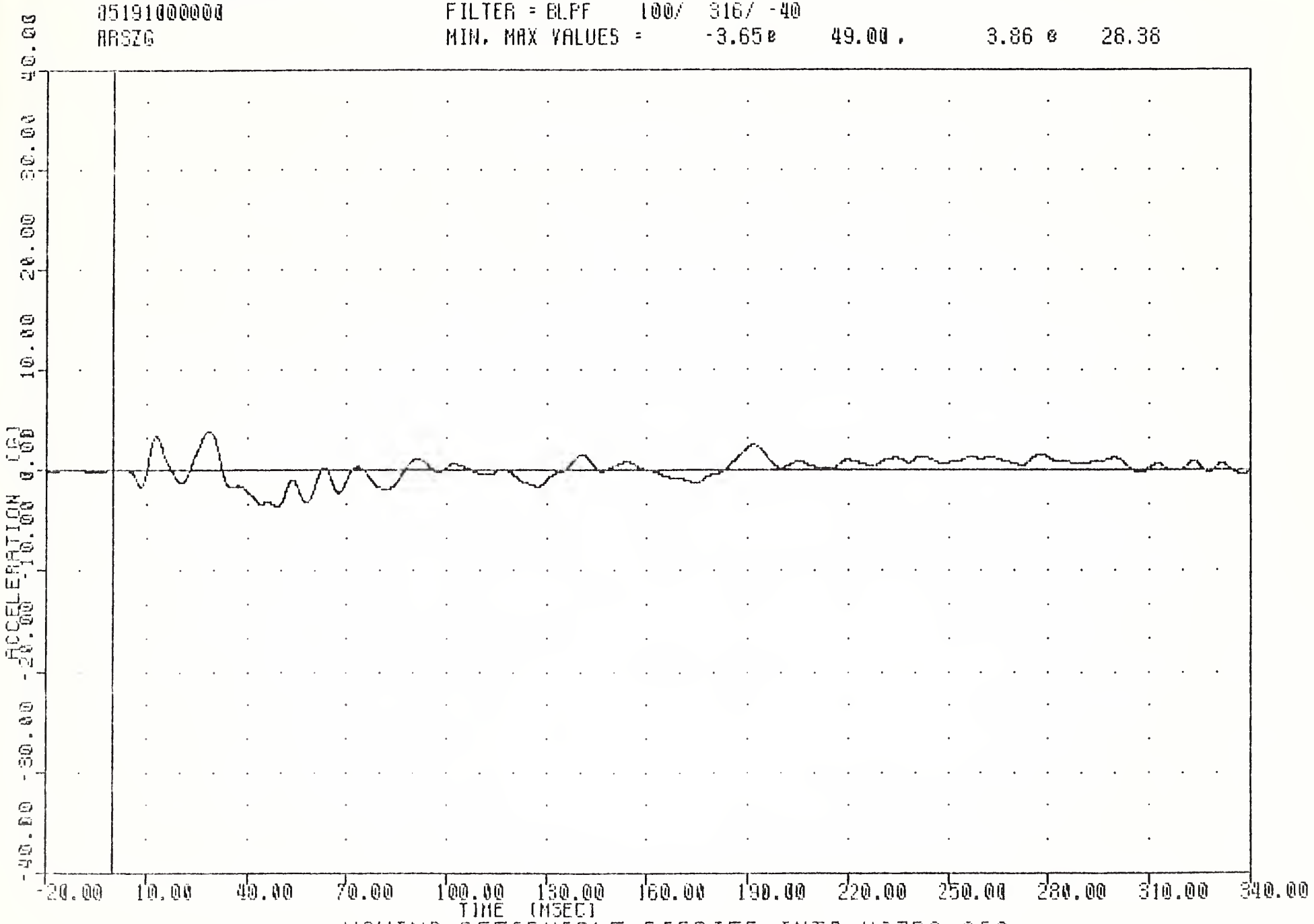
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE RIGHT REAR SILL ACCELERATION X AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
8519100000D FILTER = BLFF 100/ 316/ -40
RRSYG MIN, MAX VALUES = -2.35@ 152.25 , 12.88 @ 14.63



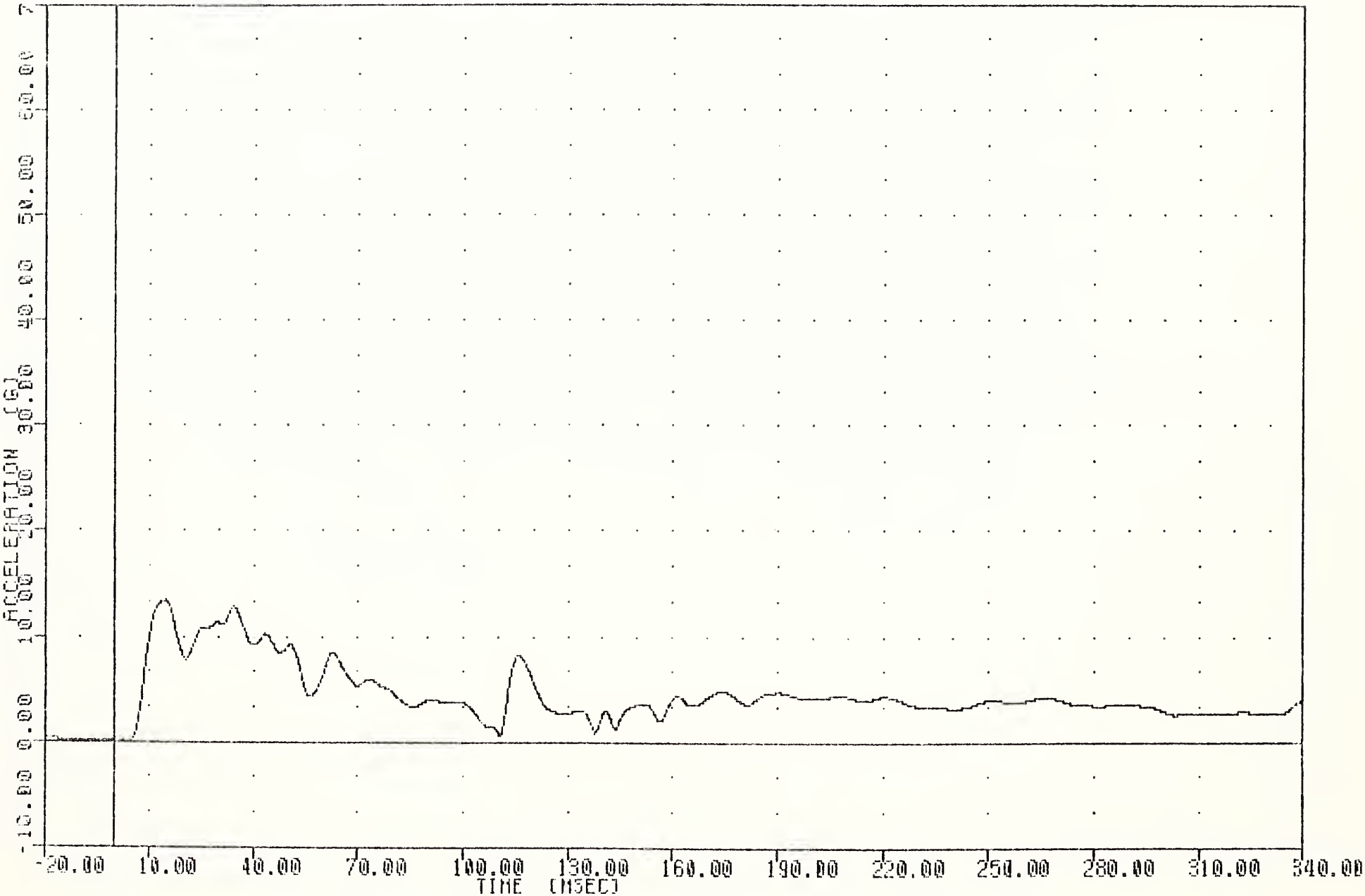
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE RIGHT REAR SILL ACCELERATION Y AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
05191000000 FILTER = BLPF 100/ 316/ -40
ARSZG MIN, MAX VALUES = -3.65 @ 49.00 , 3.86 @ 28.38



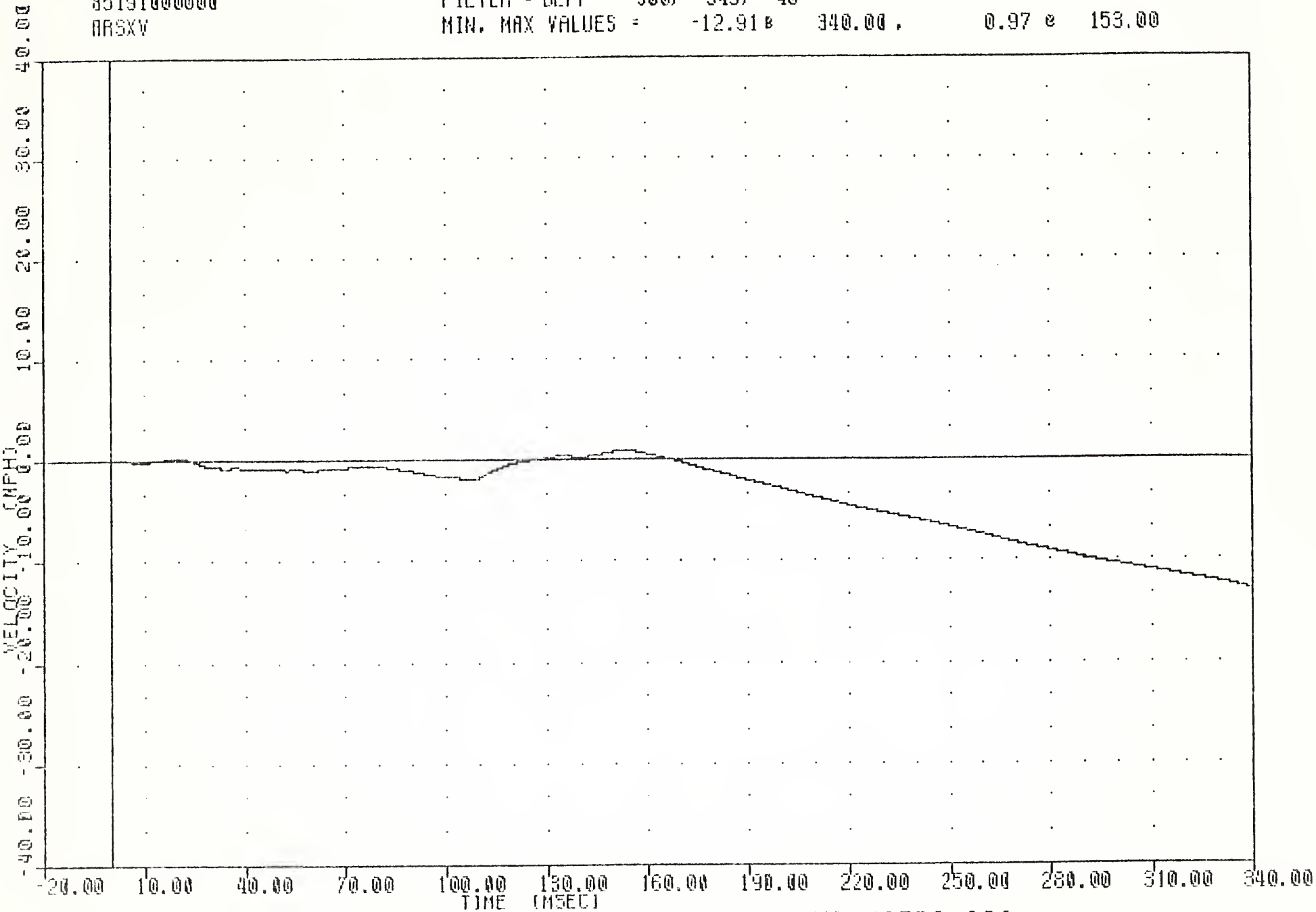
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE RIGHT REAR SILL ACCELERATION Z AXIS

VRT , 650710 PLOT DATE 16-JUL-85 12:22:38
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 100/ 316/ -40
RASRG MIN. MAX VALUES = 0.048 3.75 , 13.42 @ 14.75



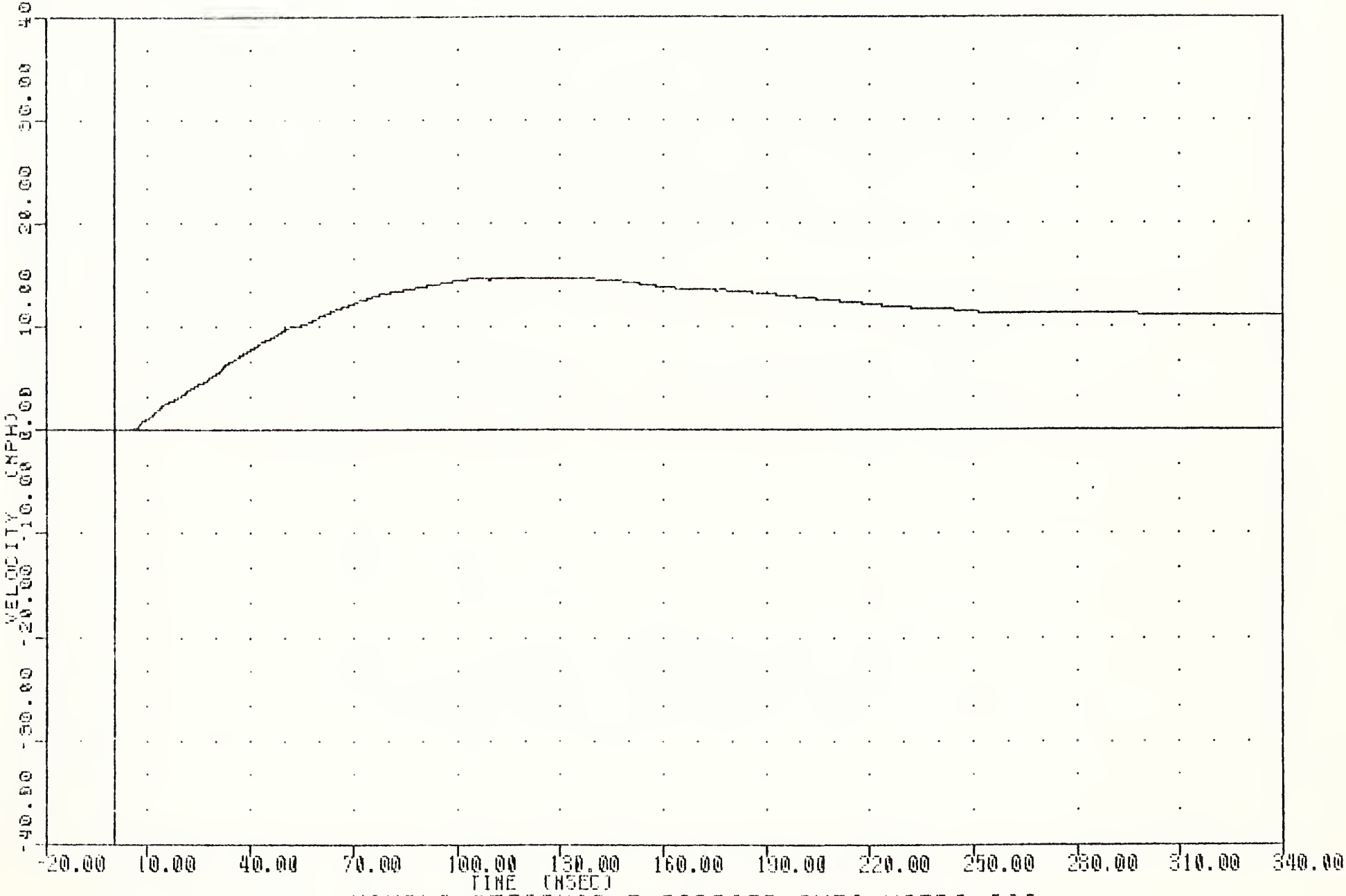
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE RIGHT REAR SILL RESULTANT

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
RRSXV MIN. MAX VALUES = -12.91 @ 340.00 , 0.97 @ 153.00

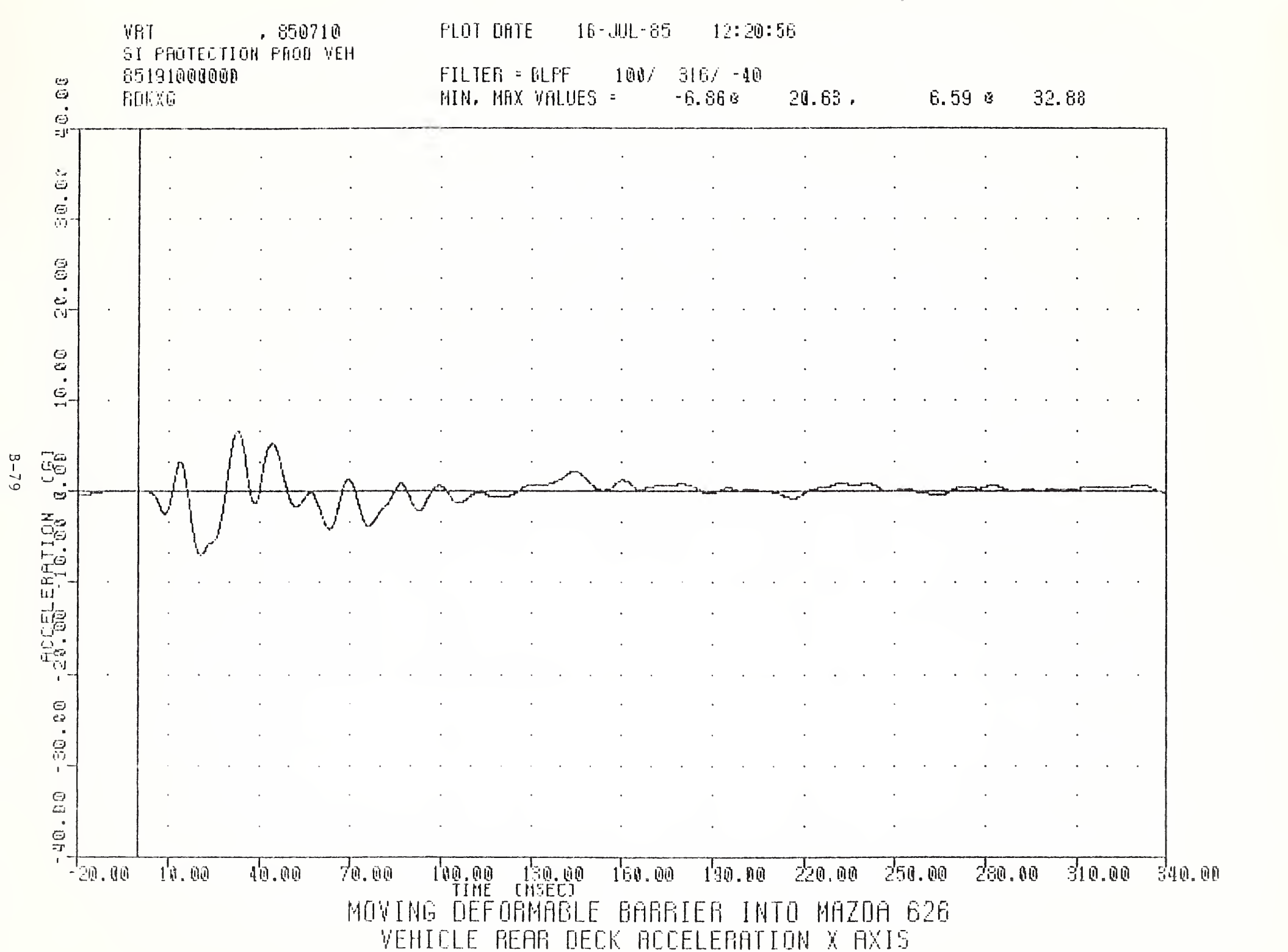


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING RRSXG

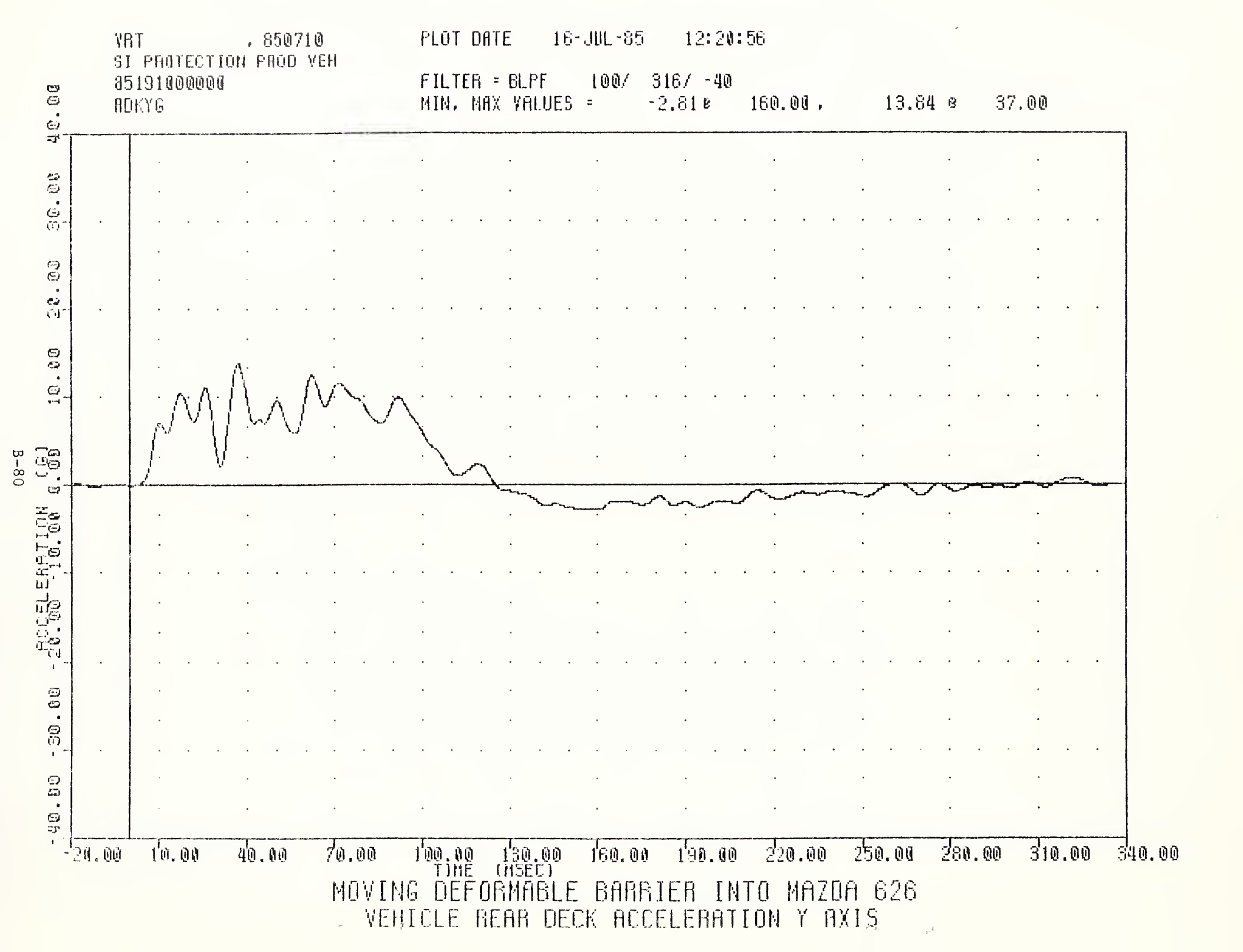
VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
RRSYY MIN, MAX VALUES = 0.00 @ -20.00 , 14.73 @ 127.13



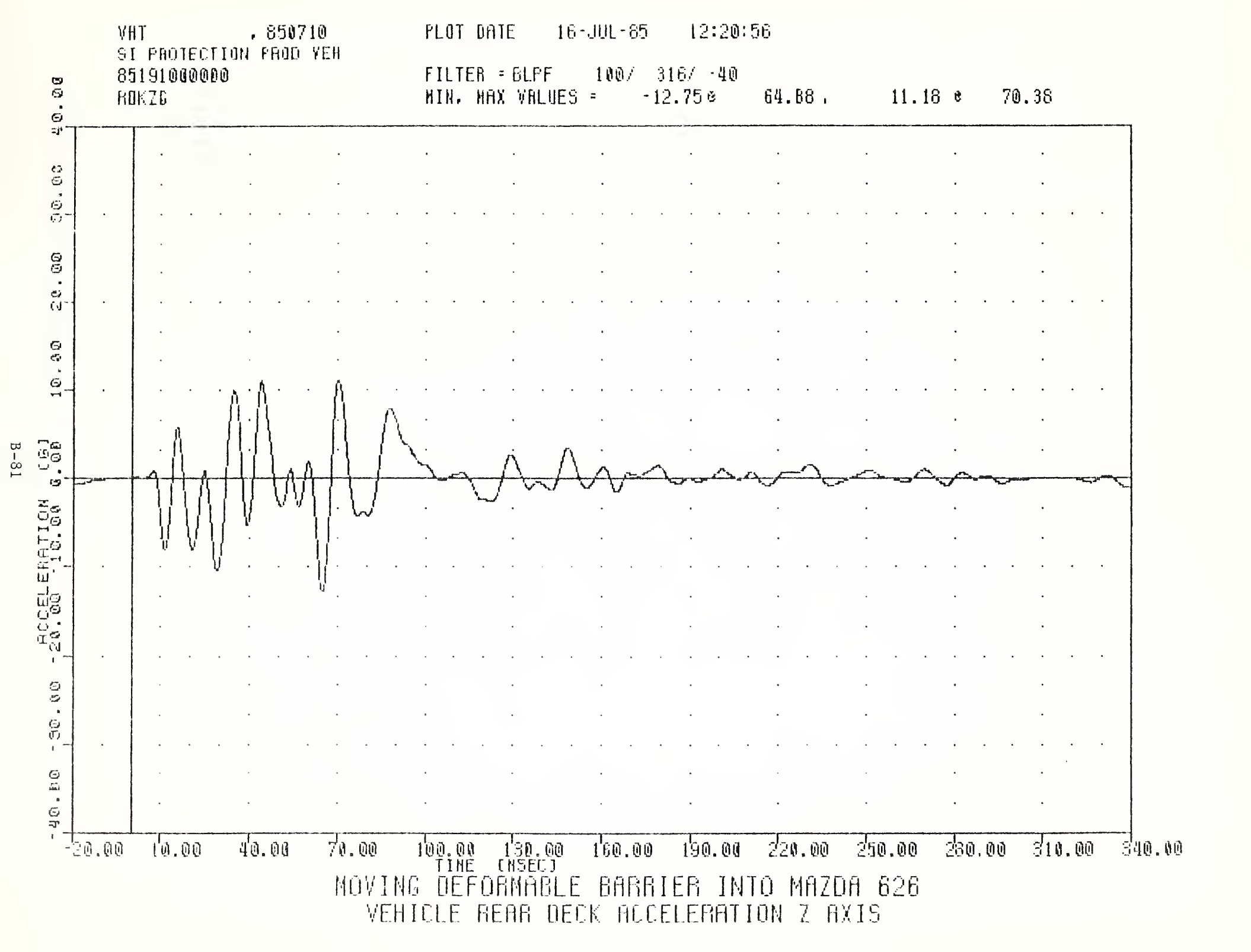
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING RRSYG



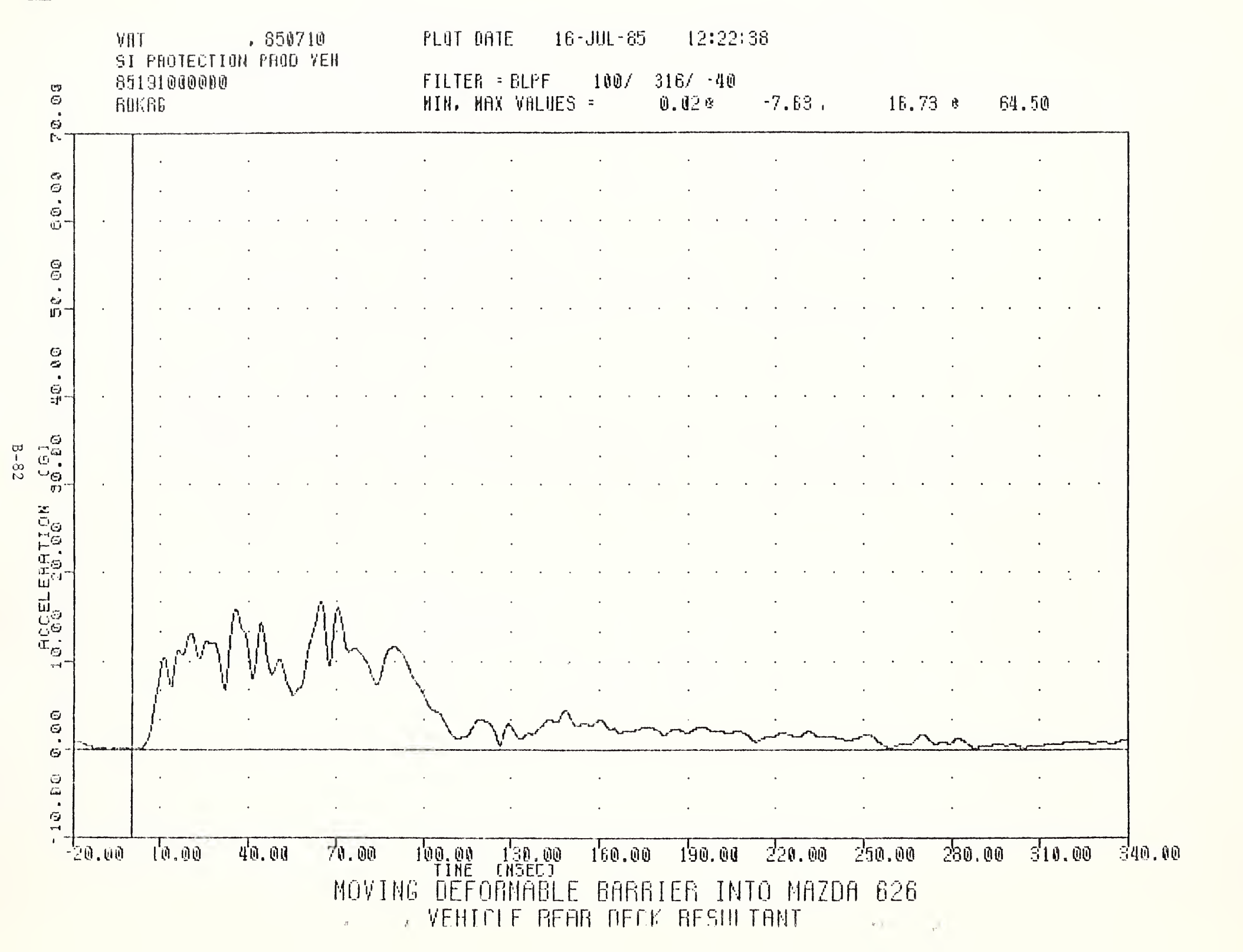
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE REAR DECK ACCELERATION X AXIS

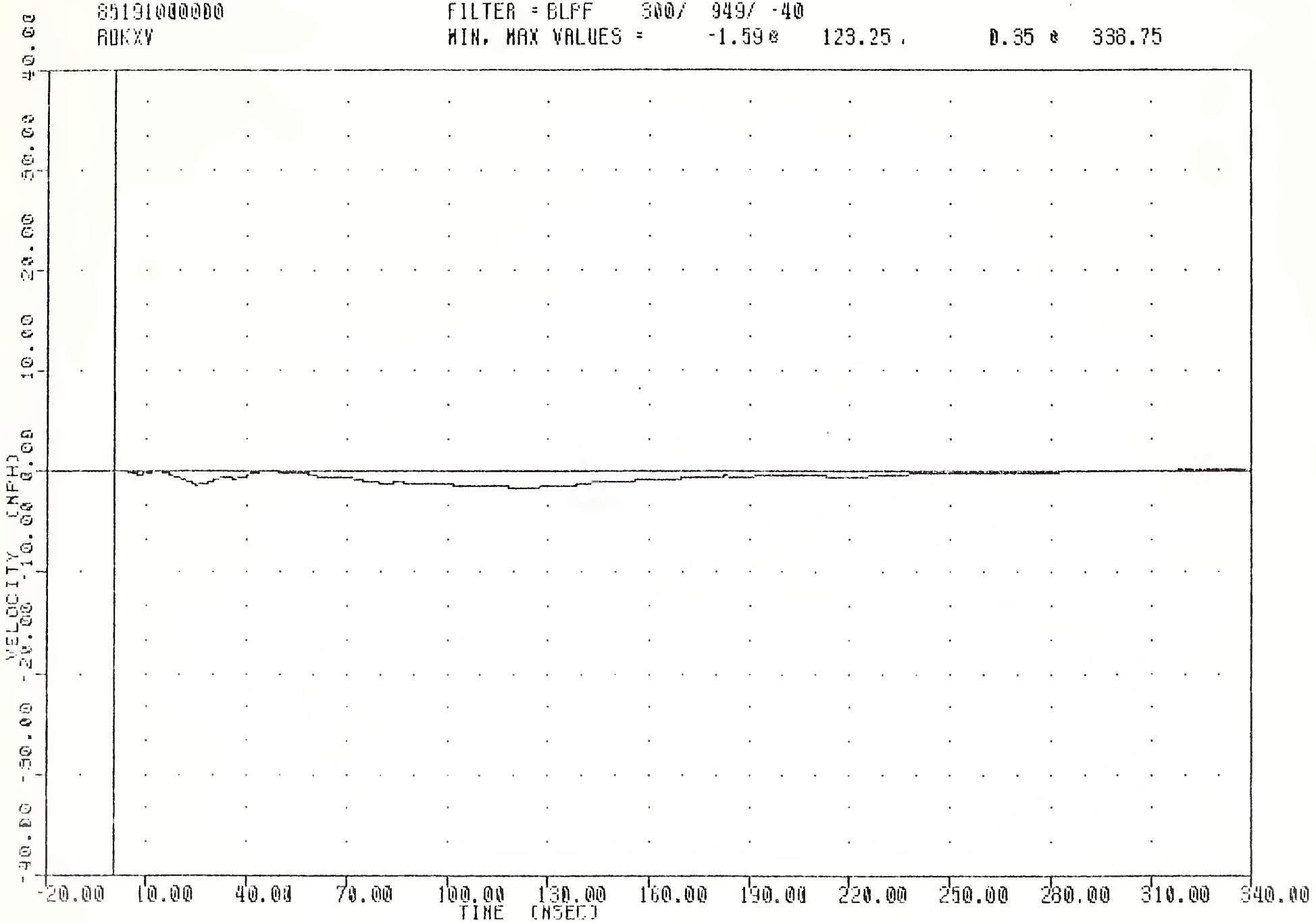


MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE REAR DECK ACCELERATION Y AXIS



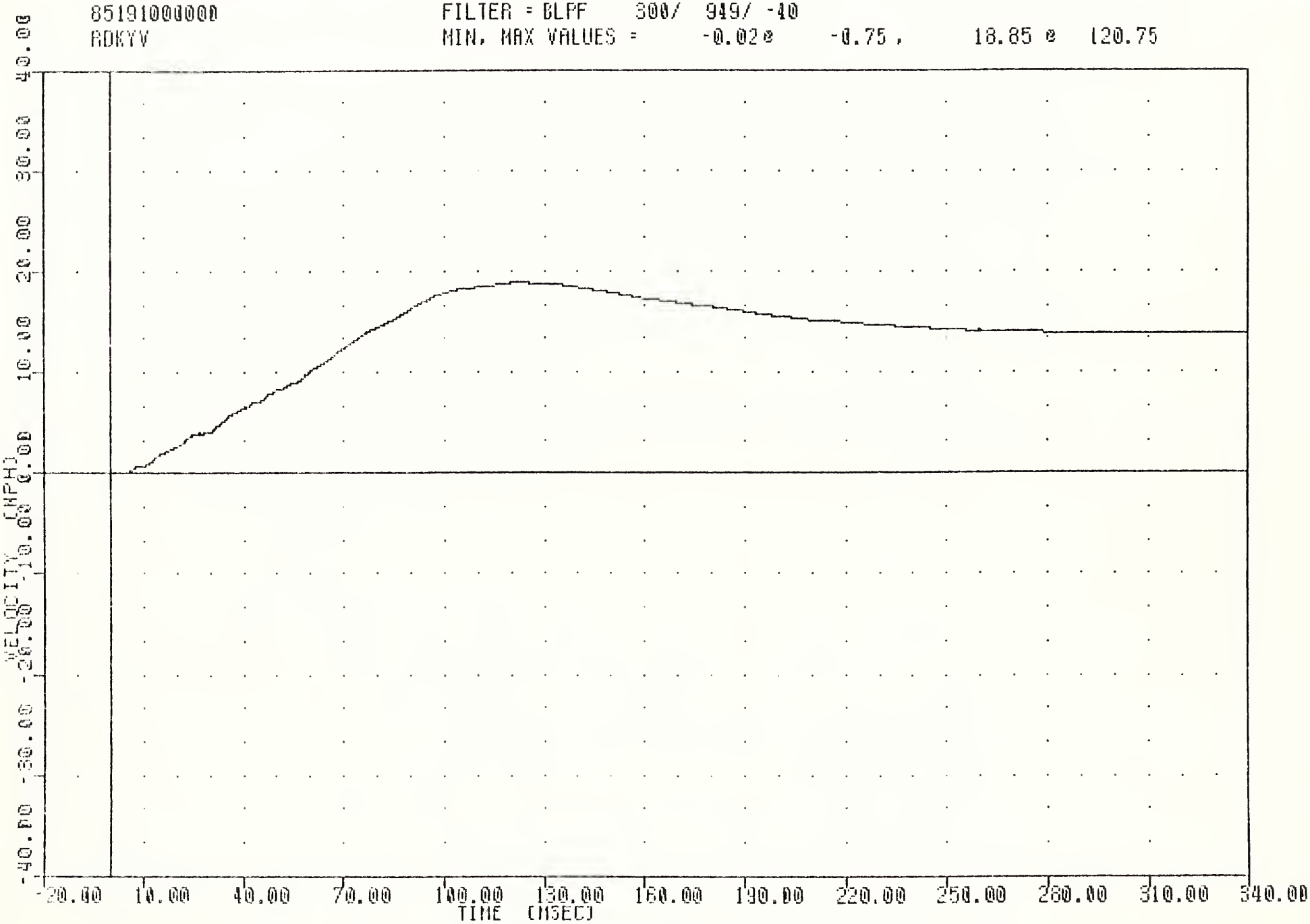
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE REAR DECK ACCELERATION Z AXIS


VAT , 850710
SI PROTECTION PROD VEH
851310000000
RDKRG
PLOT DATE 16-JUL-85 12:22:38
FILTER = BLPF 100/ 316/ -40
MIN, MAX VALUES = 0.02@ -7.63 , 16.73 @ 64.50
ACCELERATION (G)
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
10.00
40.00
70.00
100.00
130.00
160.00
190.00
220.00
250.00
280.00
310.00
340.00
TIME (MSEC)
MOVING DEFORMABLE BARRIER INTO MAZDA 626
, VEHICLE REAR DECK RESULTANT

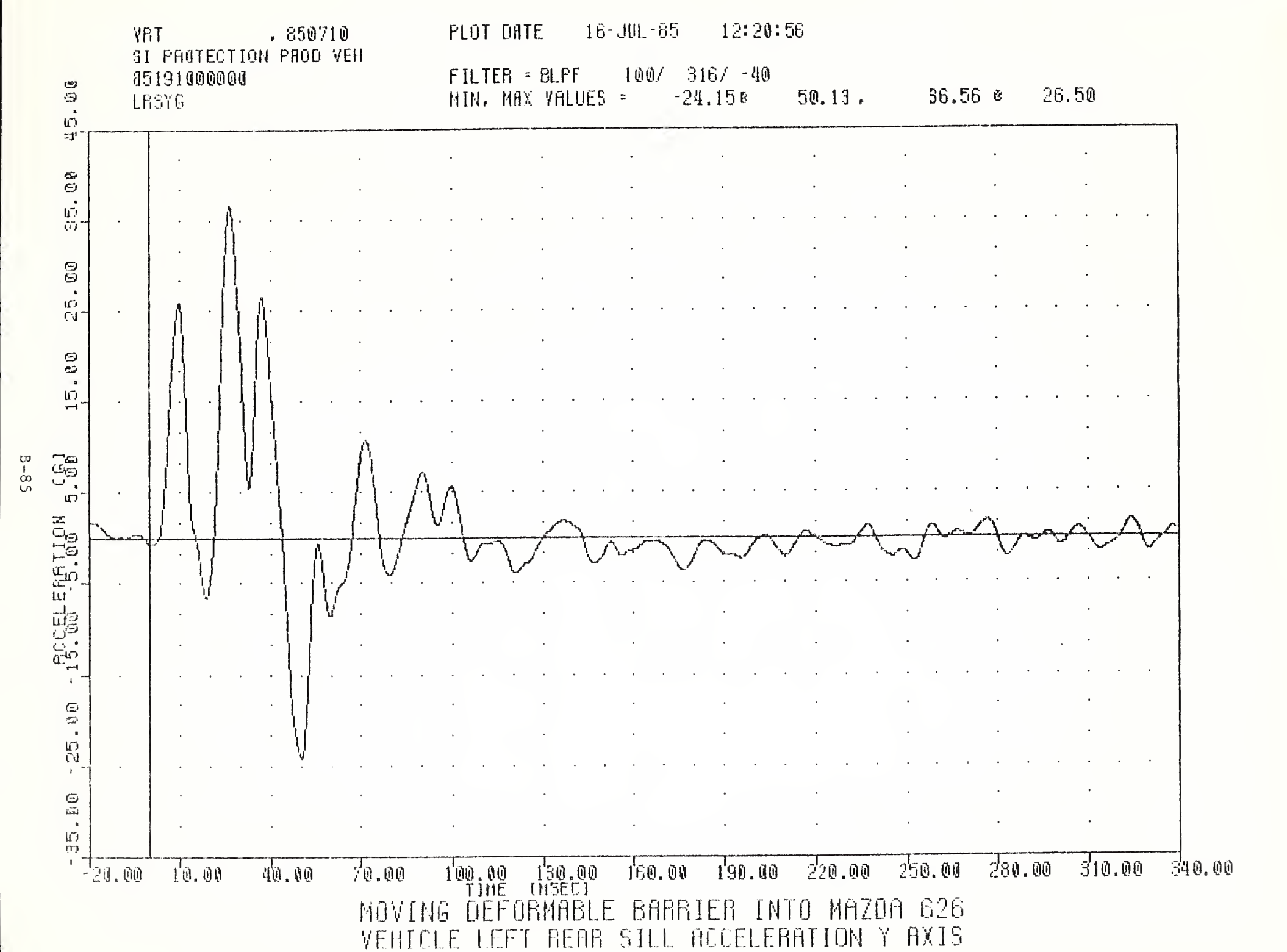


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING RDKXG

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
RDKYV MIN, MAX VALUES = -0.02 @ -0.75 , 18.85 @ 120.75

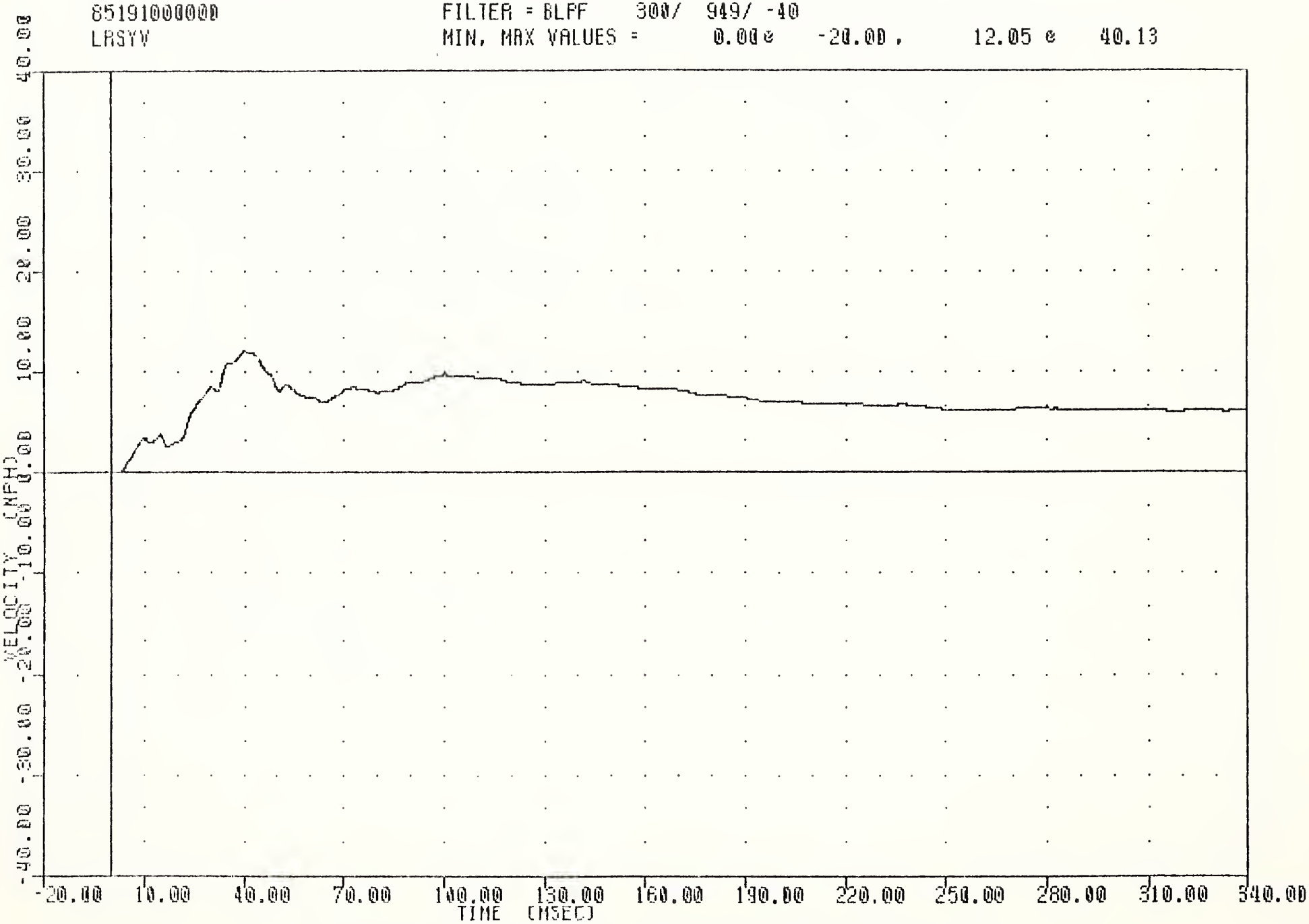


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING RDKYG

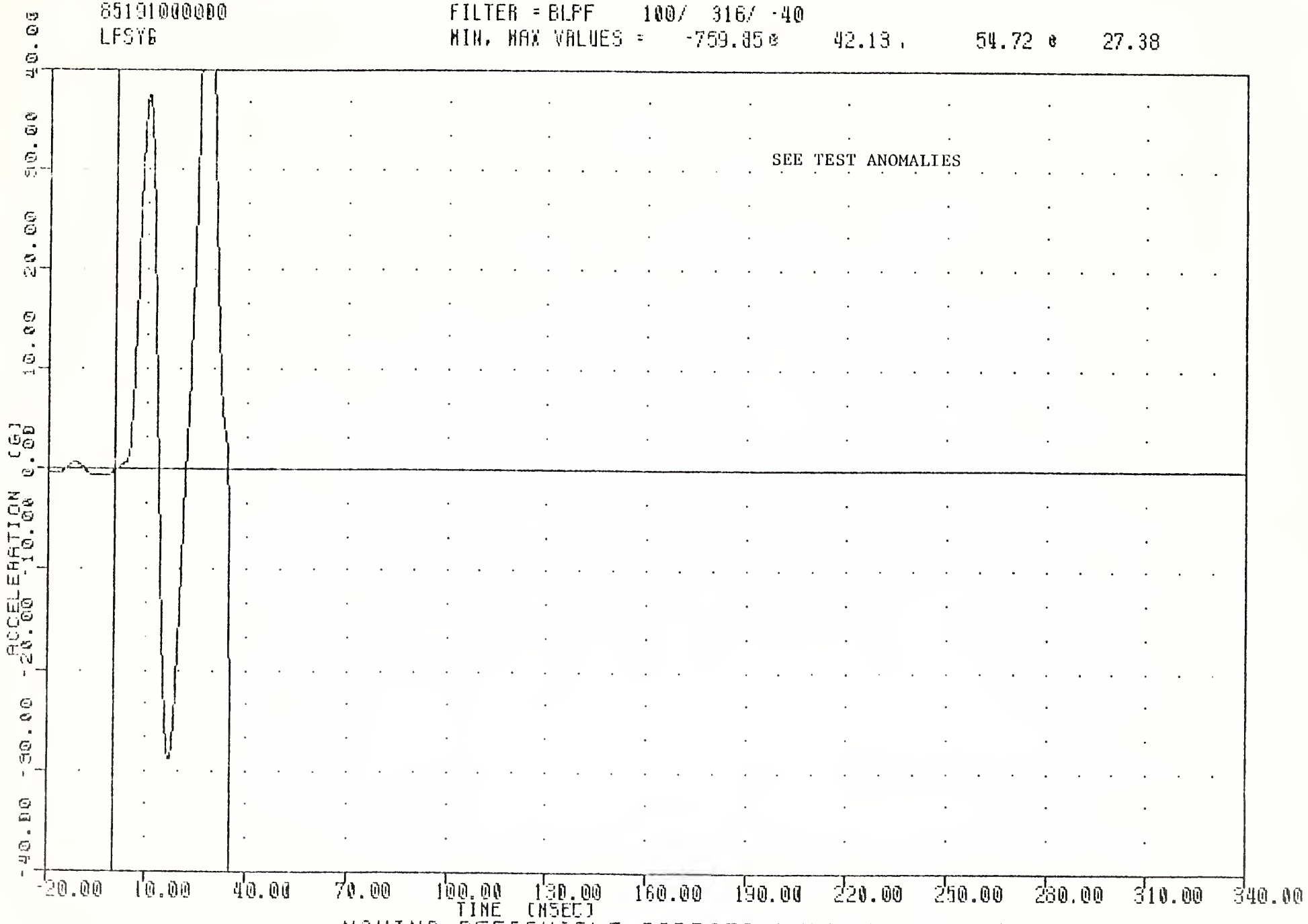


MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE LEFT REAR SILL ACCELERATION Y AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
LRSYV MIN, MAX VALUES = 0.00 @ -20.00 , 12.05 @ 40.13

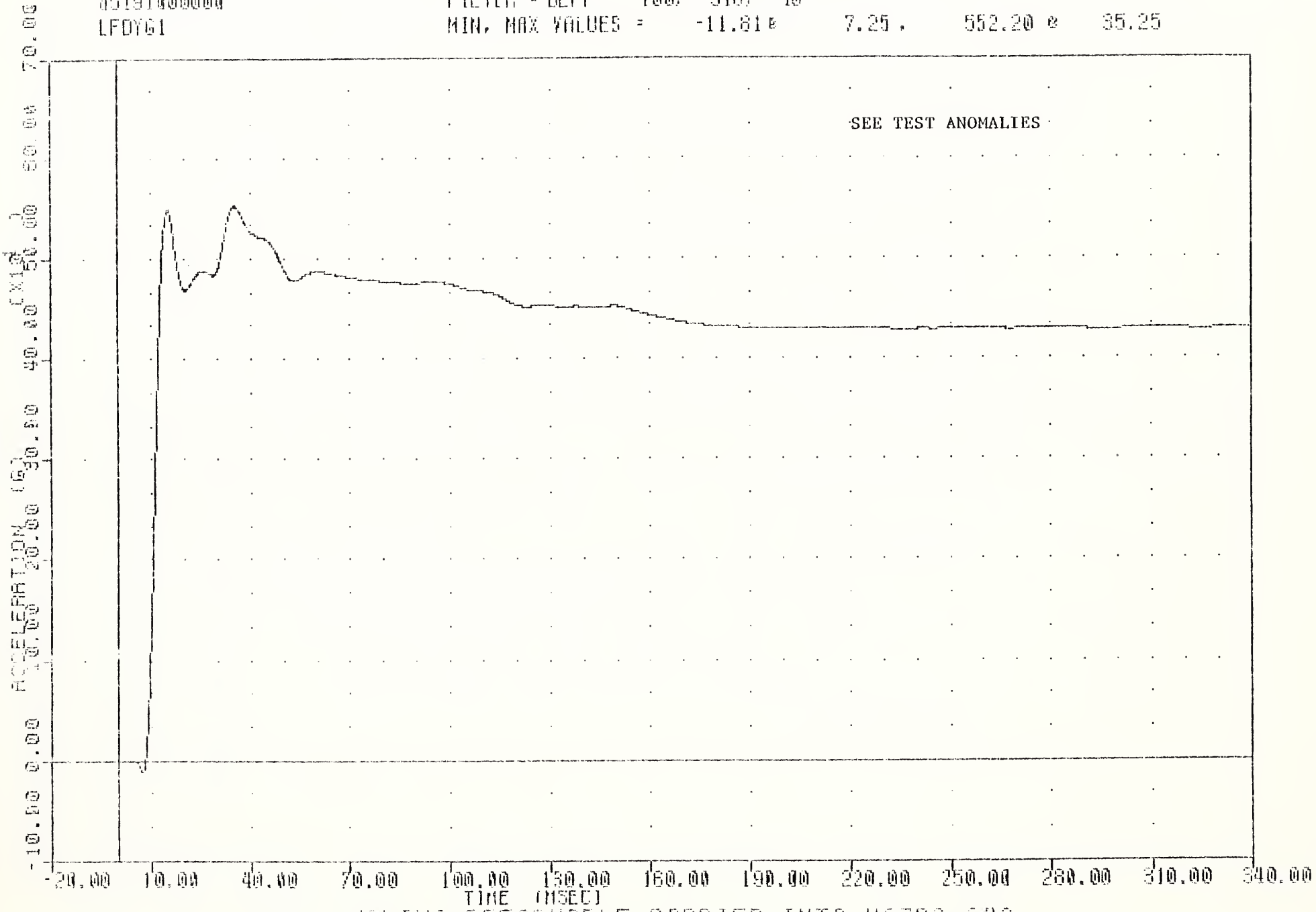


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LRSYG



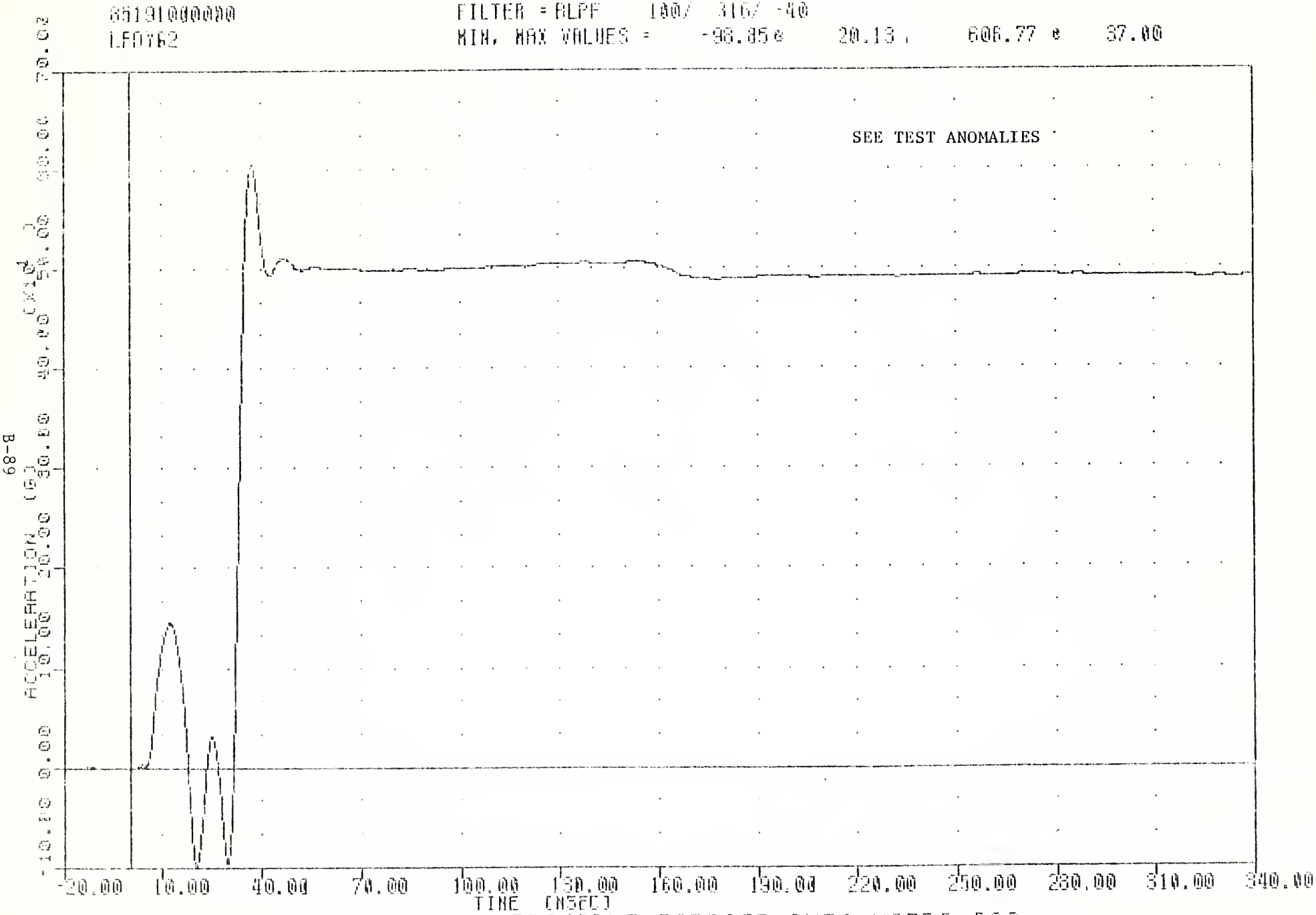
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE LEFT FRONT SILL ACCELERATION Y AXIS

VRT , 850710 PLOT DATE 19-JUL-85 14:06:34
SI PROTECTION PROD VEH
851910000004 FILTER = BLPF 100/ 316/ -10
LFDY61 MIN, MAX VALUES = -11.81 @ 7.25 , 552.20 @ 35.25



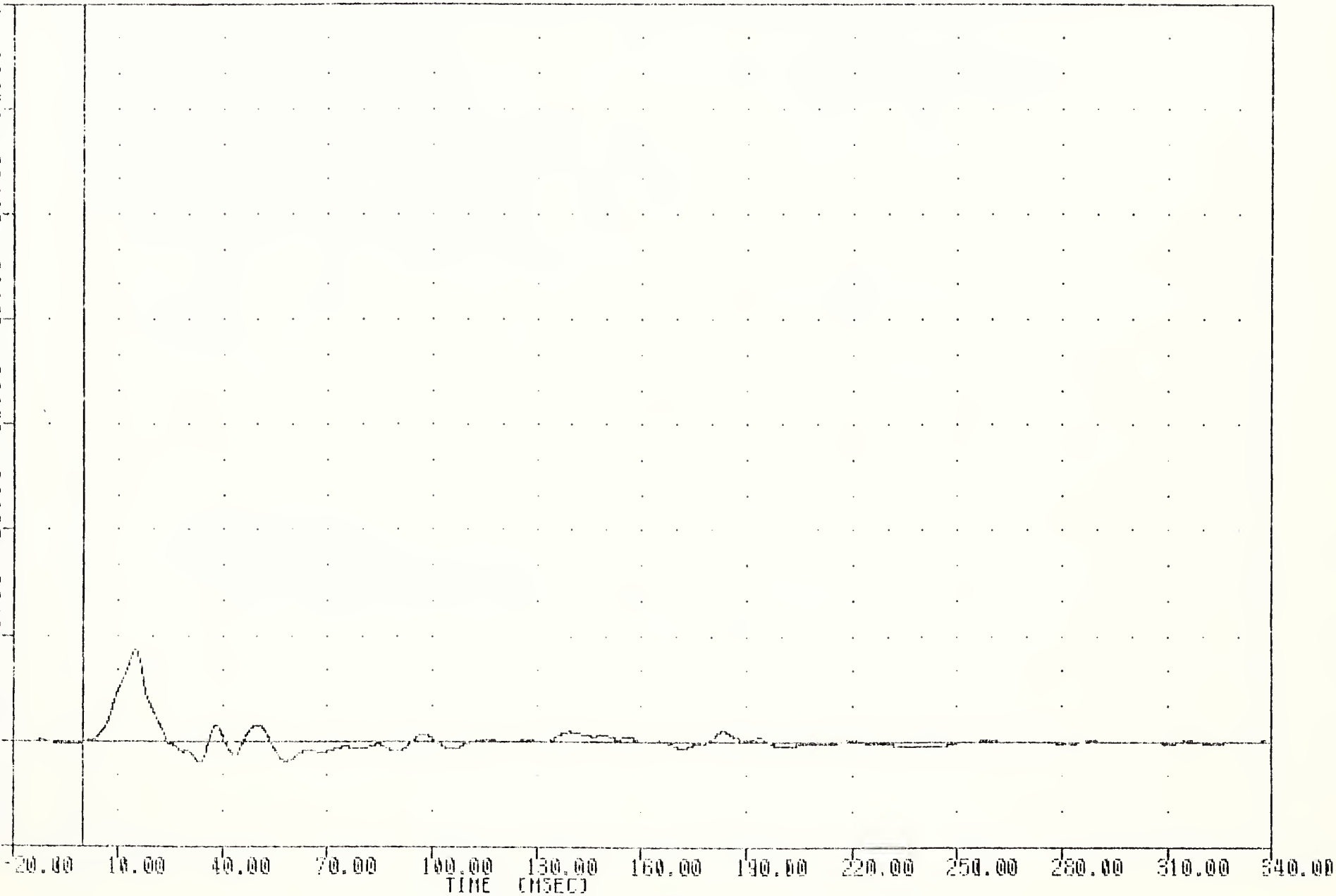
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE LEFT FRONT DOOR (POSITION 6) ACCELERATION,Y AXIS

VAT , 850710 PLOT DATE 14-JUL-85 14:06:34
SI PROTECTION PROD VEH
85191000000 FILTER = RLPF 100/ 316/ -40
LF0762 MIN, MAX VALUES = -98.85@ 20.13, 606.77 @ 37.00



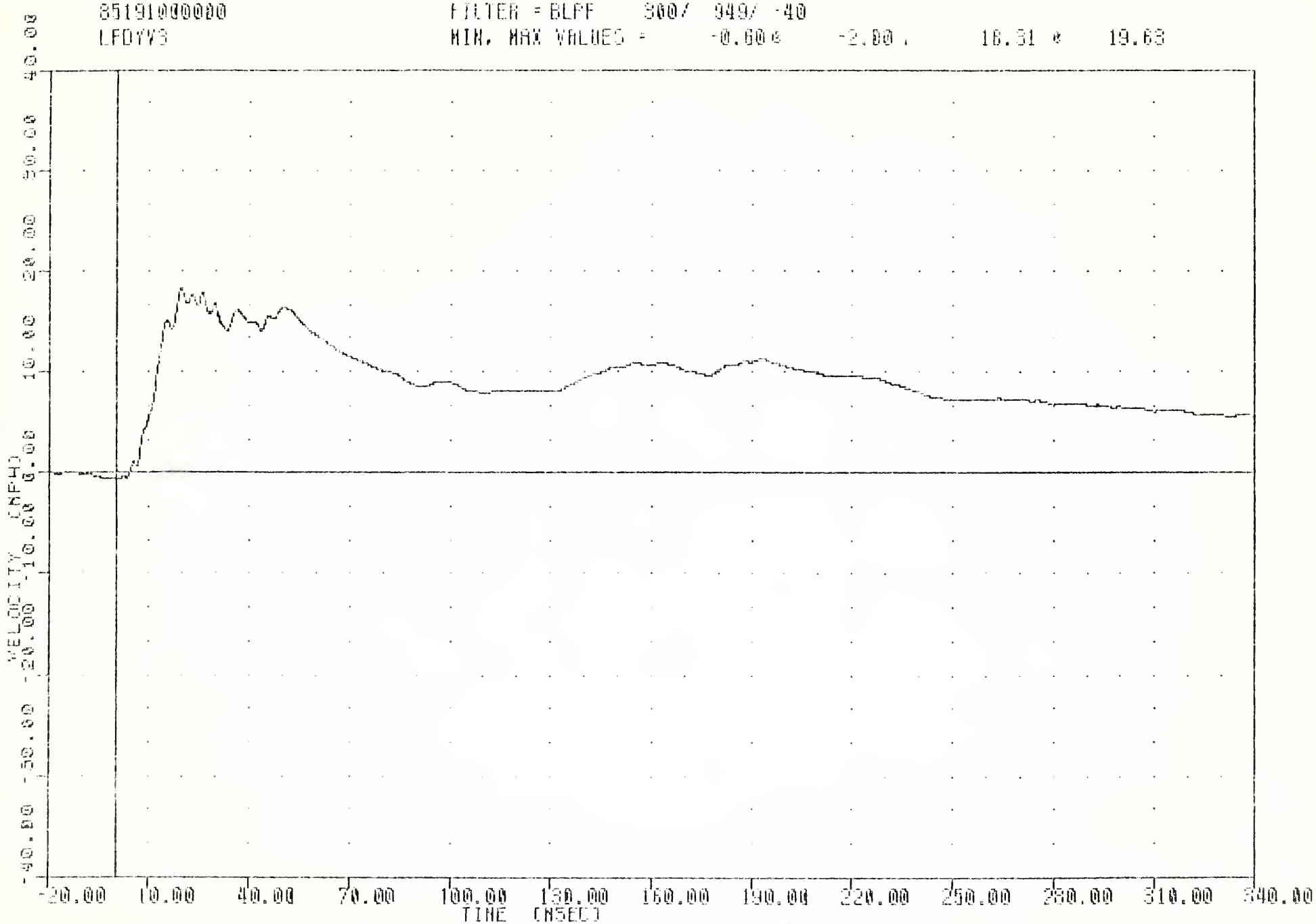
MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE LEFT FRONT DOOR (POSITION 8) ACCELERATION Y AXIS

VRT , 850710 PLOT DATE 19-JUL-85 14:06:34
ST PROTECTION PROD VEH
8519100A000 FILTER = BLPF 100/ 316/ -40
LFDY63 MIN, MAX VALUES = -20.69 @ 33.63 , 87.34 @ 15.13

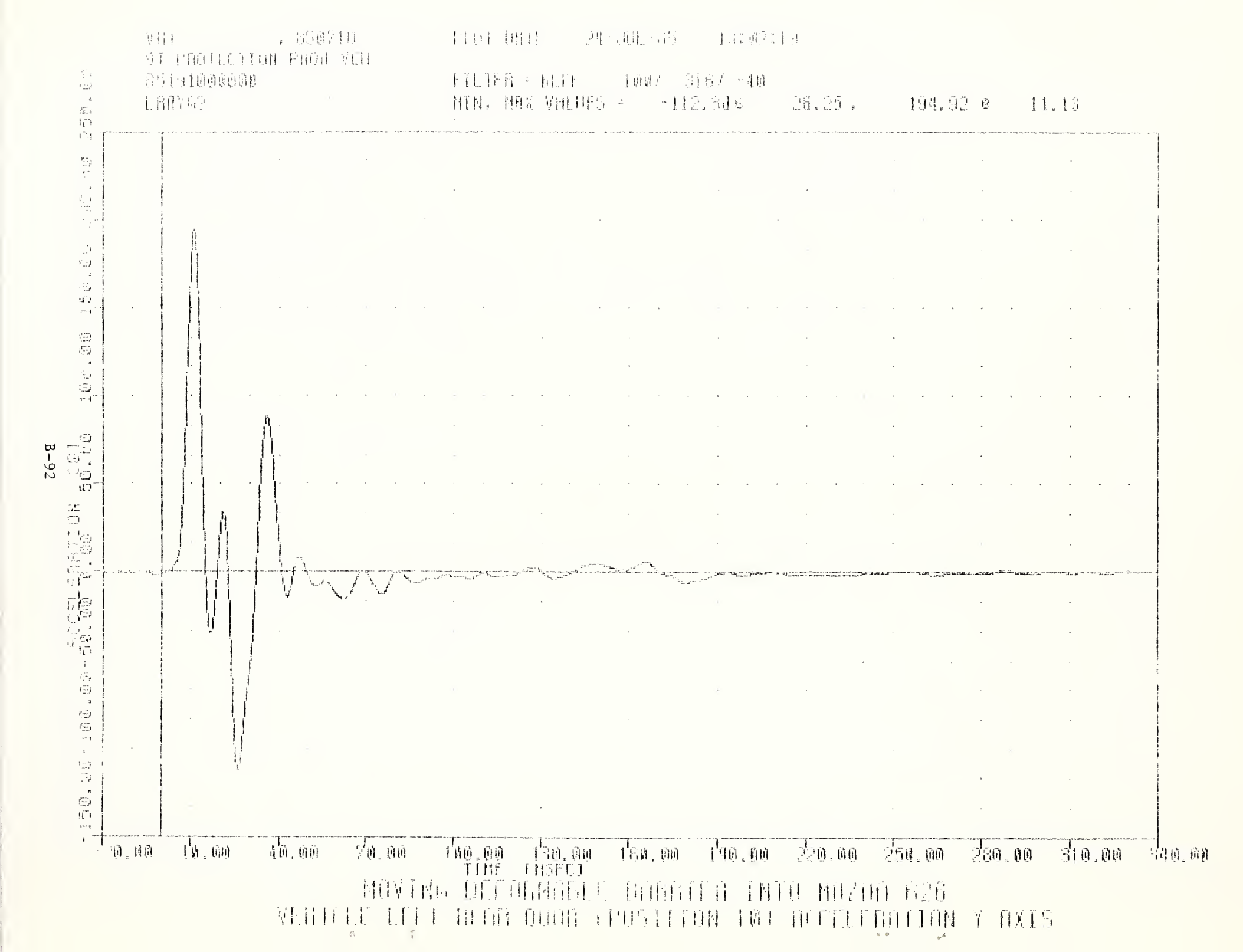


MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE LEFT FRONT DOOR (POSITION 9) ACCELERATION, Y AXIS

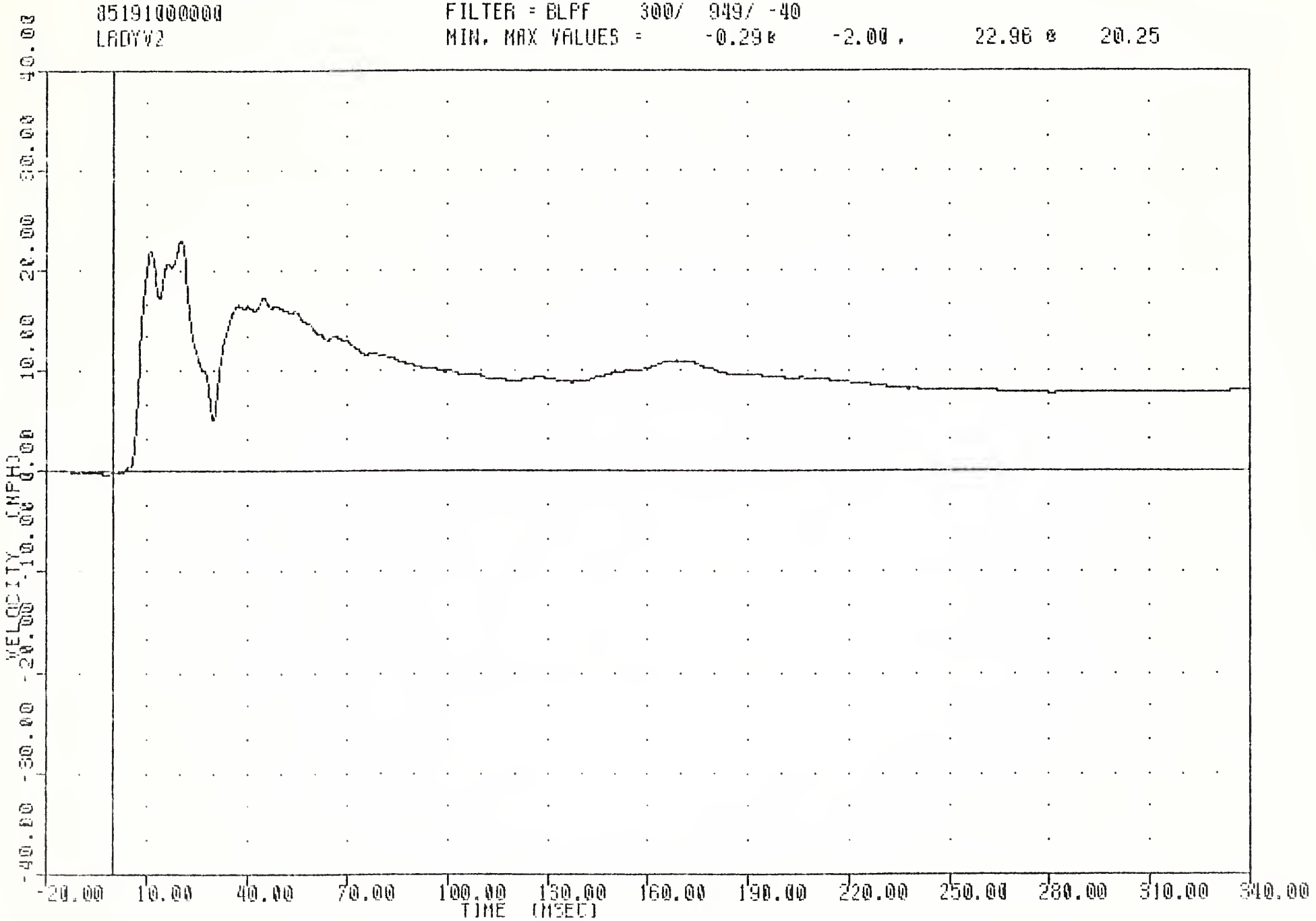
VAT , 850710 PLOT DATE 19-JUL-85 14:06:34
S1 PROTECTION PROD VEH
851910000000 FILTER = BLPF 300/ 949/ -40
LFDYY9 MIN, MAX VALUES = -0.60 @ -2.00 , 18.31 @ 19.68



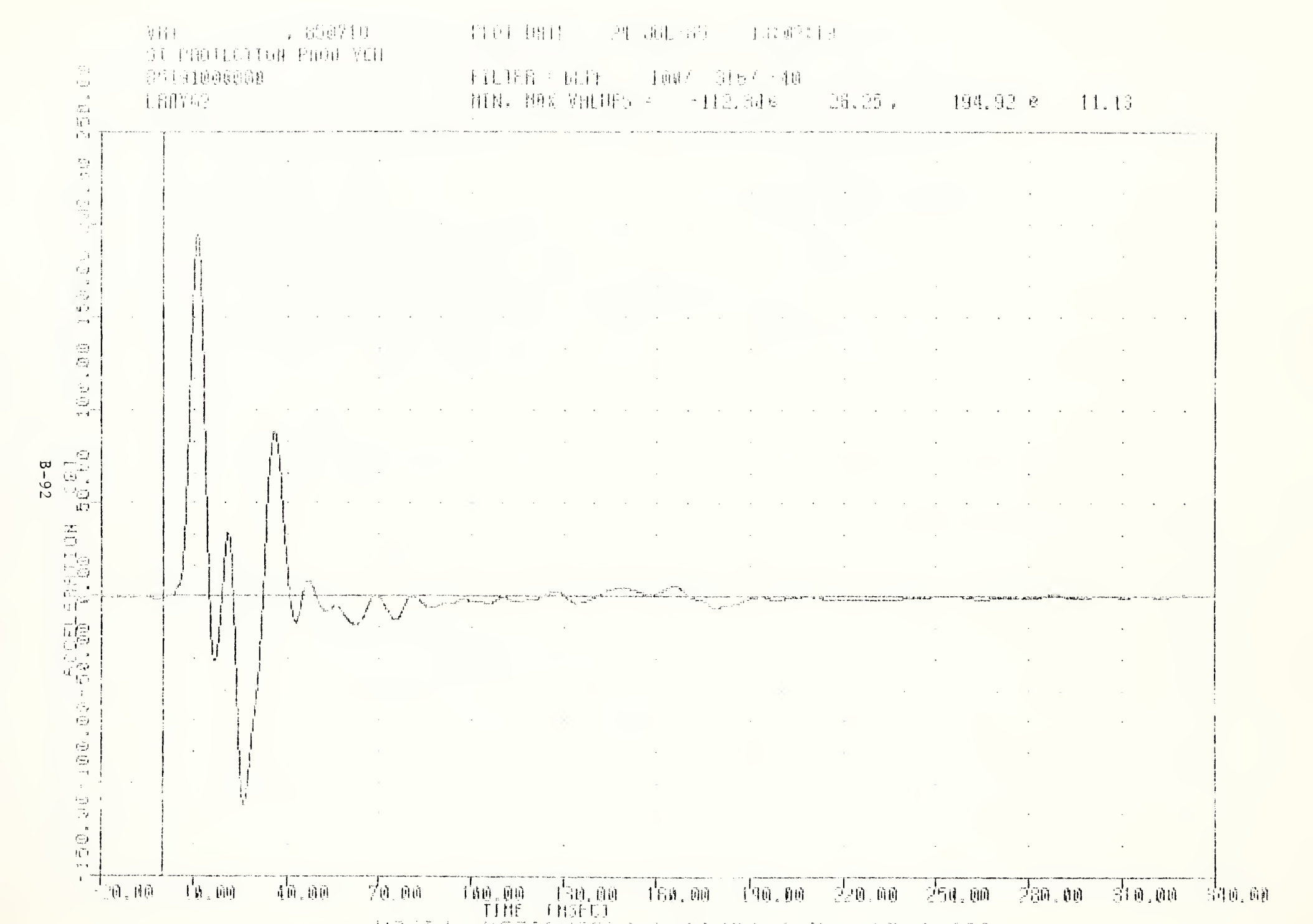
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LFDYY9


VEH , 850710
ST PROTECTION FROM VEH
251=1000000
LAMY62
FILTER = W.F. low/ 316/ -40
MIN. MAX VALUES = -112.3dB 26.25 , 194.92 @ 11.13
-150.00 -100.00 -50.000 0.000 50.000 100.00 150.00 200.00 250.00
ACCELERATION (G)
0.00 10.000 40.000 70.000 100.00 130.00 160.000 190.00 220.00 250.000 280.00 310.00 340.00
TIME (MSEC)
MOVING DEFORMABLE BARRIER INTO MID/LH M26
VEHICLE LEFT REAR DOOR (POSITION 10) ACCELERATION Y AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
LRDYV2 MIN, MAX VALUES = -0.29 @ -2.00 , 22.96 @ 20.25

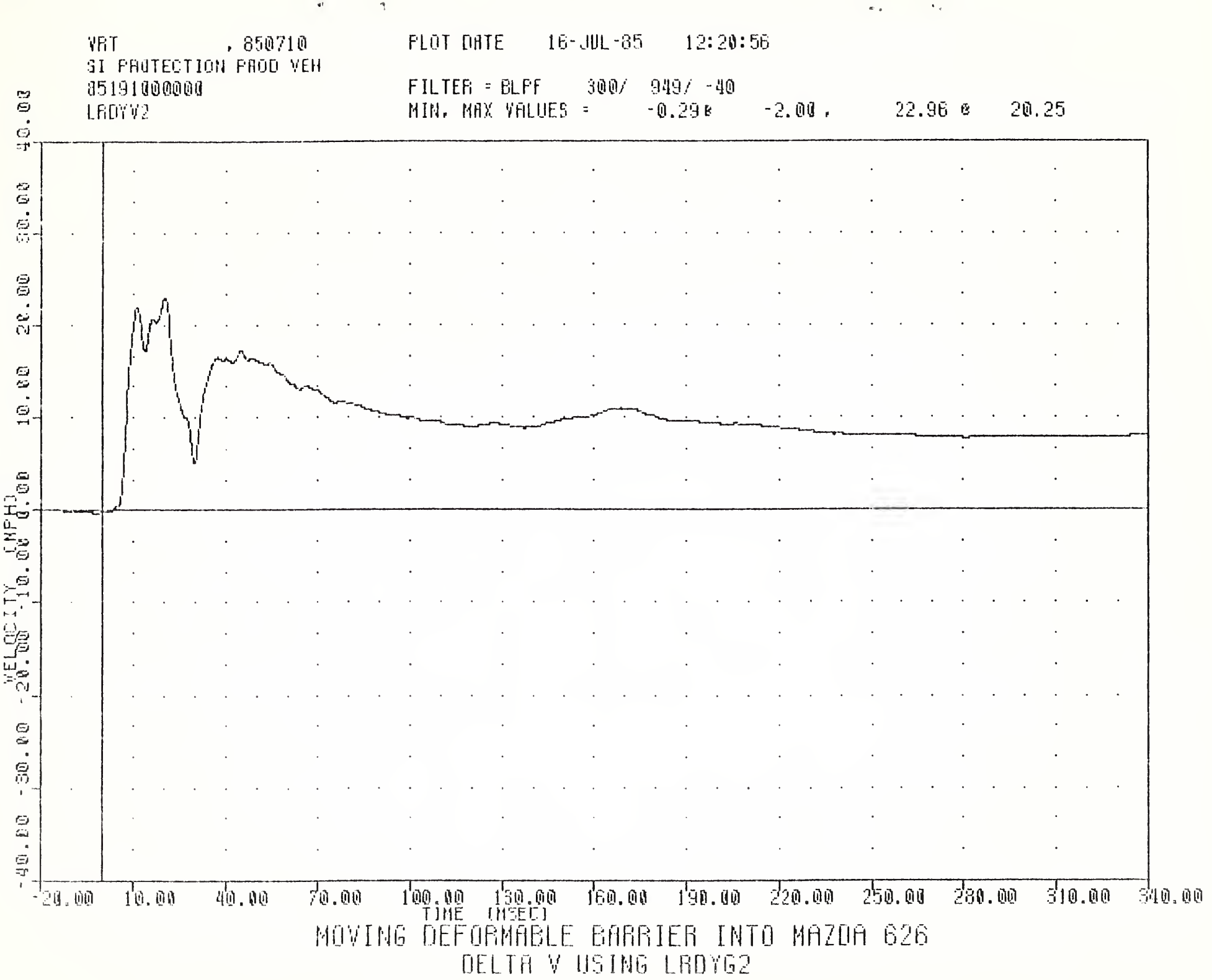


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LRDYG2



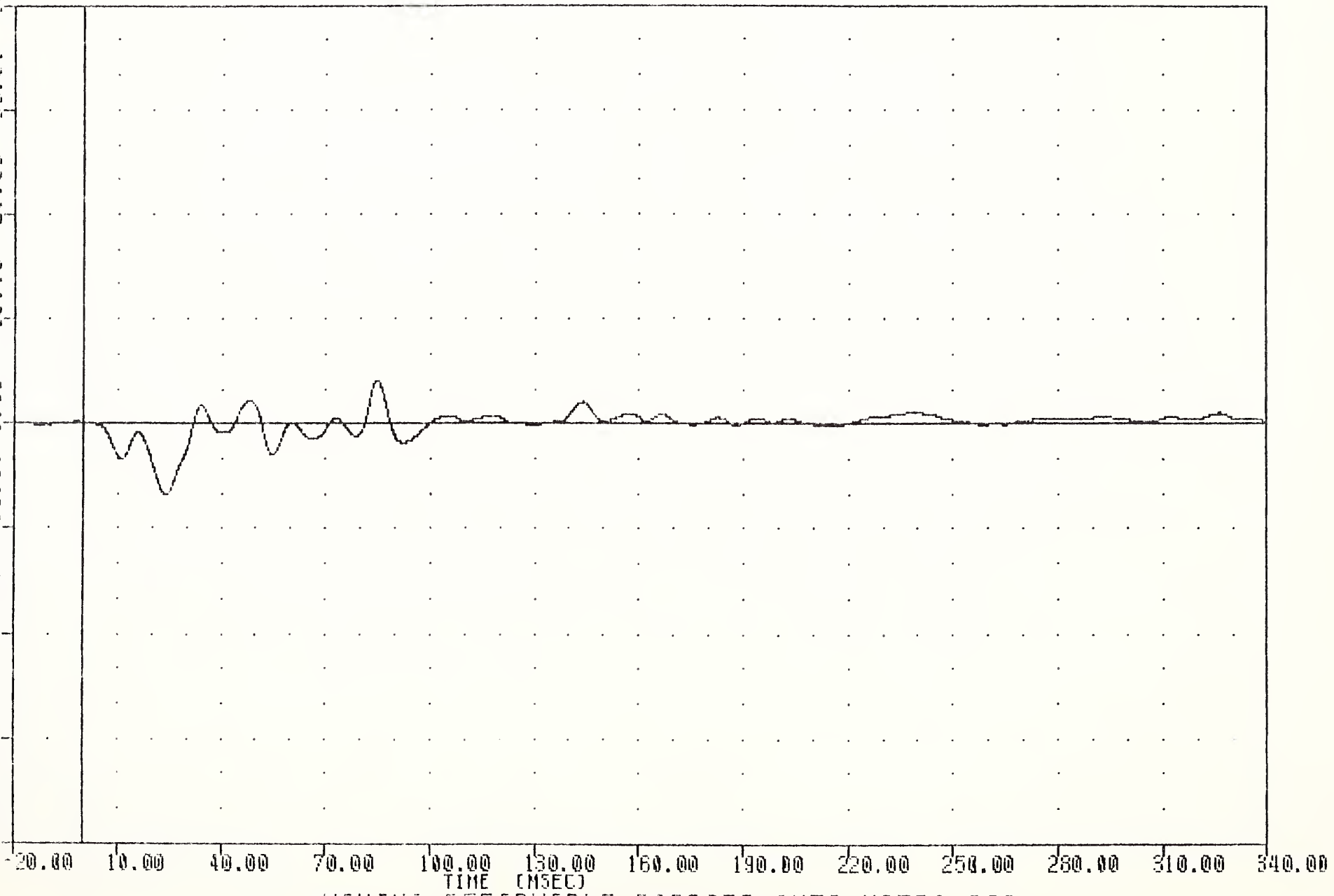
B-92

HONDA DETACHABLE BARRIER INTO MUSEUM #26
VEHICLE LEFT REAR DOOR IMPACTION TEST ACCELERATION Y AXIS

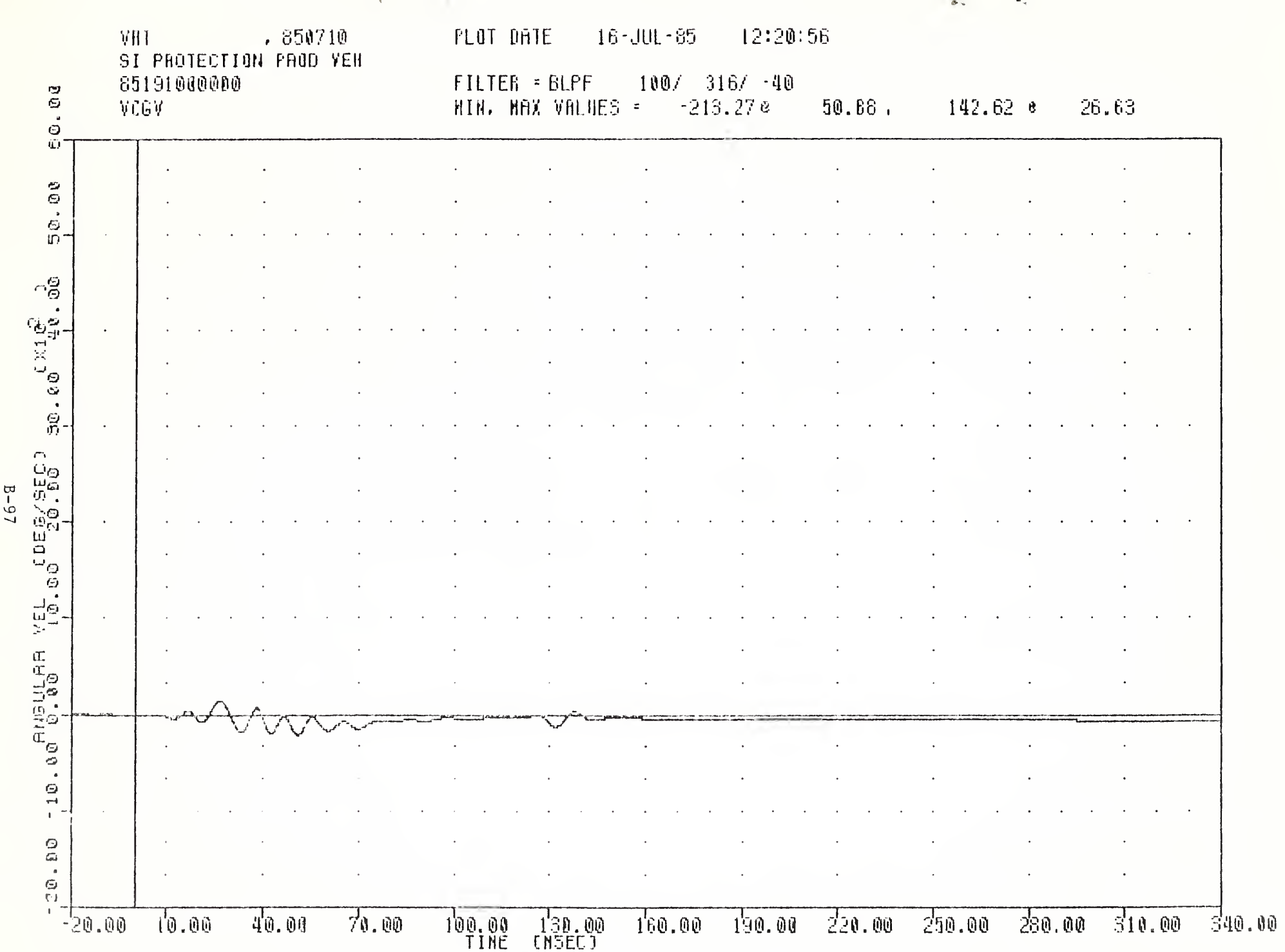


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING LRDYG2

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
8519100000D FILTER = BLPF 100/ 316/ -40
TFRXG MIN, MAX VALUES = -6.79@ 24.00 , 4.17 @ 84.75

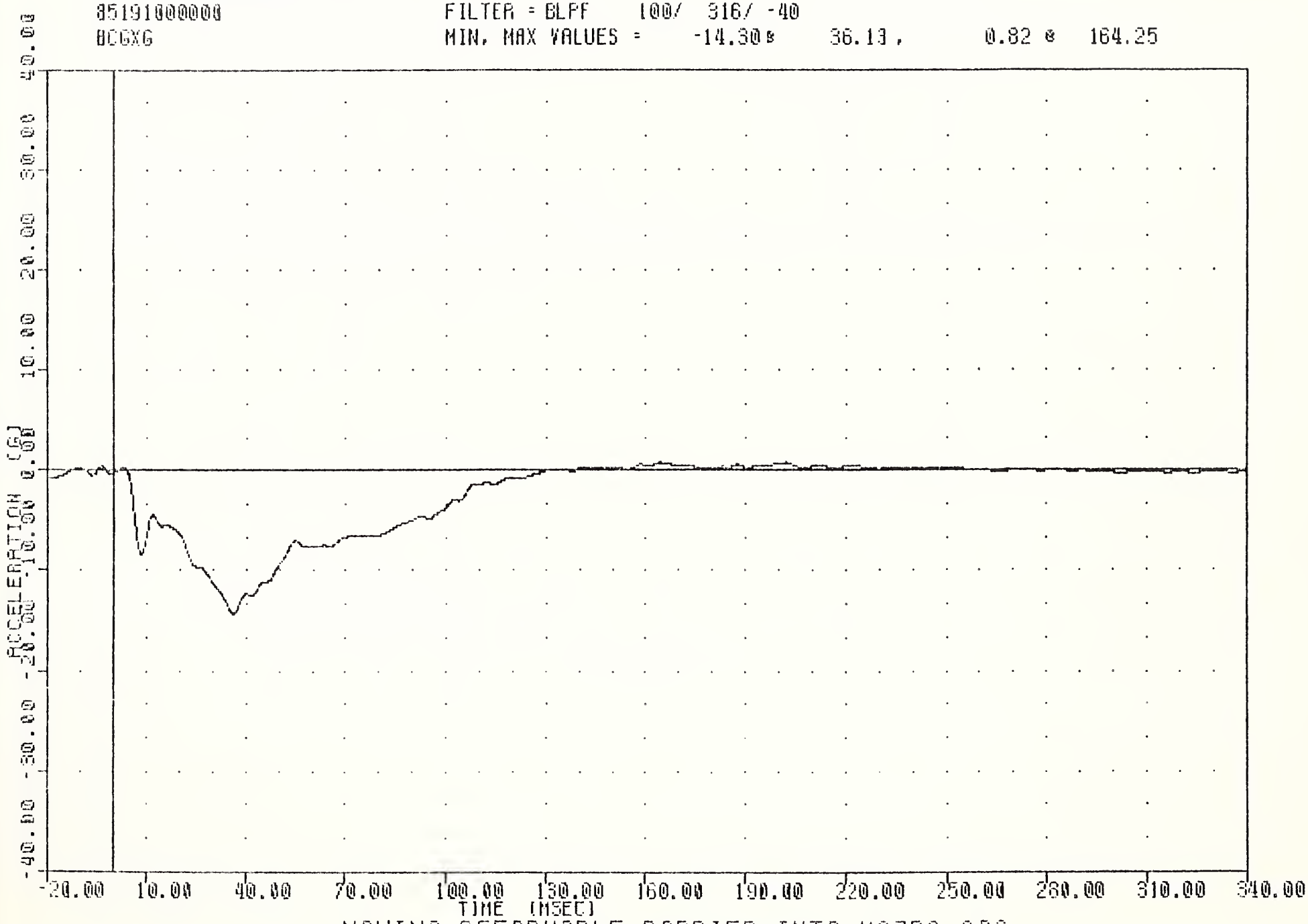


MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE TRUNK FLOOR RIGHT ACCELERATION X_AXIS

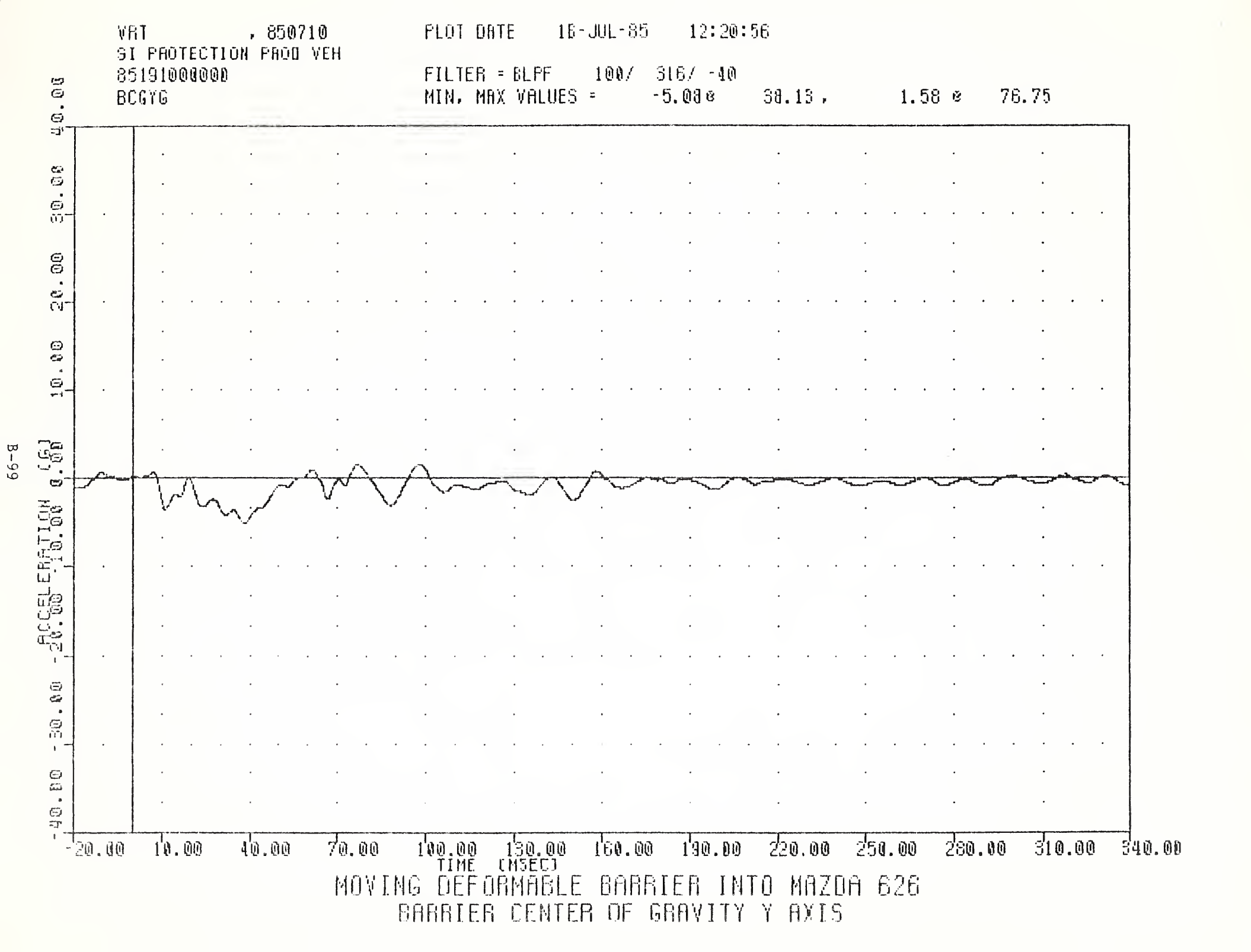


MOVING DEFORMABLE BARRIER INTO MAZDA 626
VEHICLE YAW RATE DEGREES/SEC

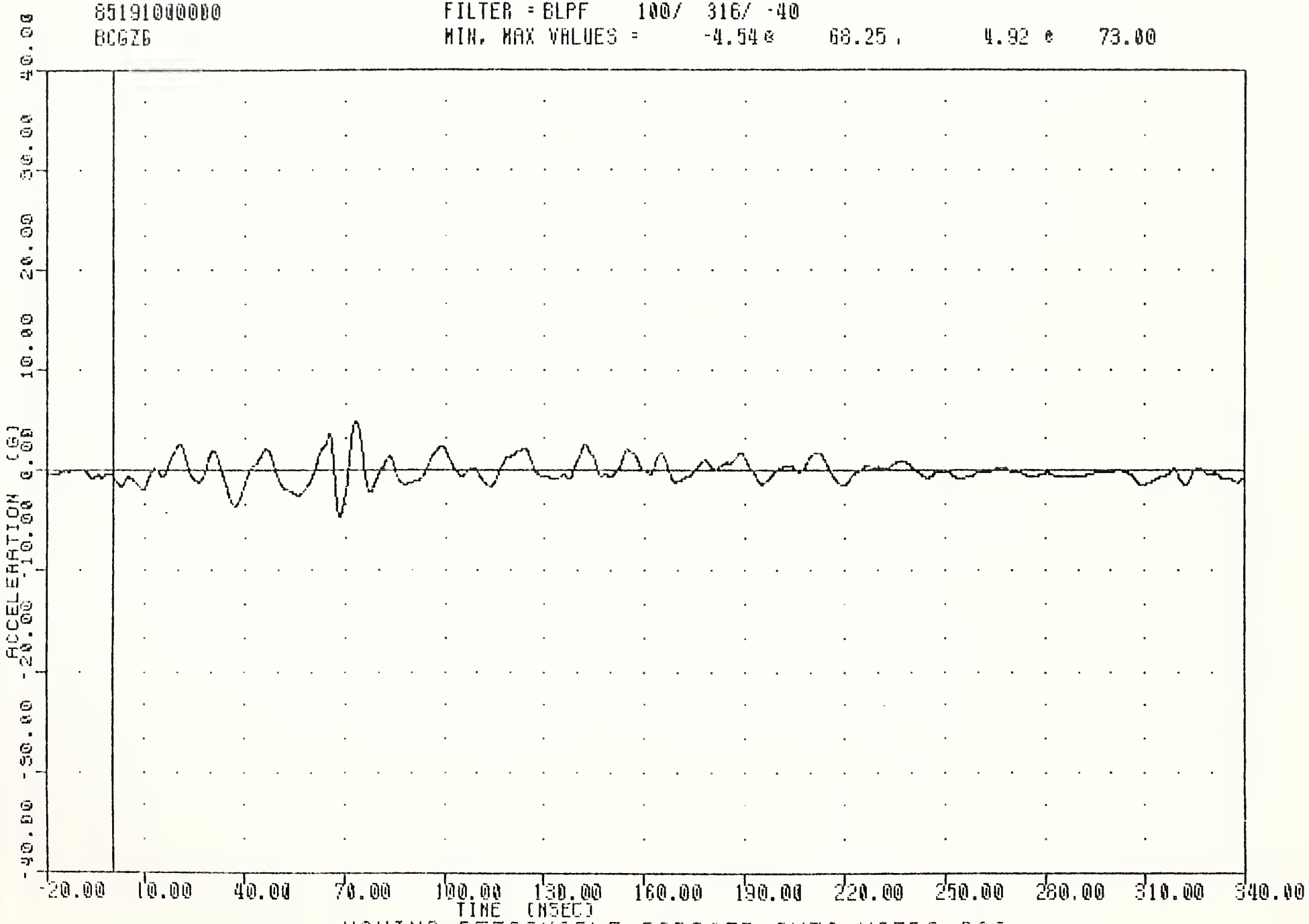
VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 100/ 316/ -40
BCGXG MIN, MAX VALUES = -14.30@ 36.13, 0.82 @ 164.25



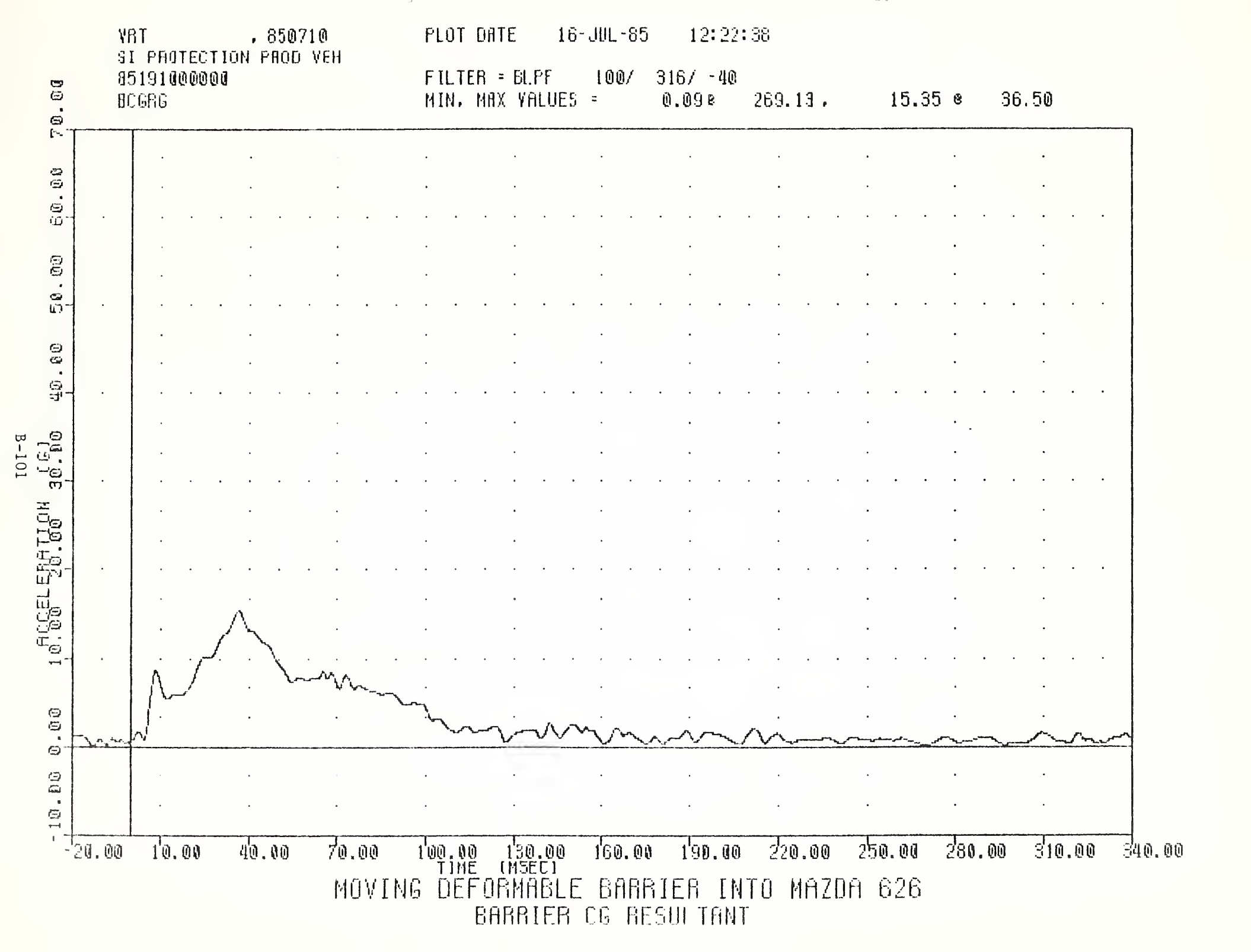
MOVING DEFORMABLE BARRIER INTO MAZDA 626
BARRIER CENTER OF GRAVITY X AXIS


VRT , 850710
PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000
FILTER = BLPF 100/ 316/ -40
BCGYG
MIN, MAX VALUES = -5.00 @ 38.13 , 1.58 @ 76.75
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00
ACCELERATION (G)
-20.00
10.00
40.00
70.00
100.00
130.00
160.00
190.00
220.00
250.00
280.00
310.00
340.00
TIME (MSEC)
MOVING DEFORMABLE BARRIER INTO MAZDA 626
BARRIER CENTER OF GRAVITY Y AXIS

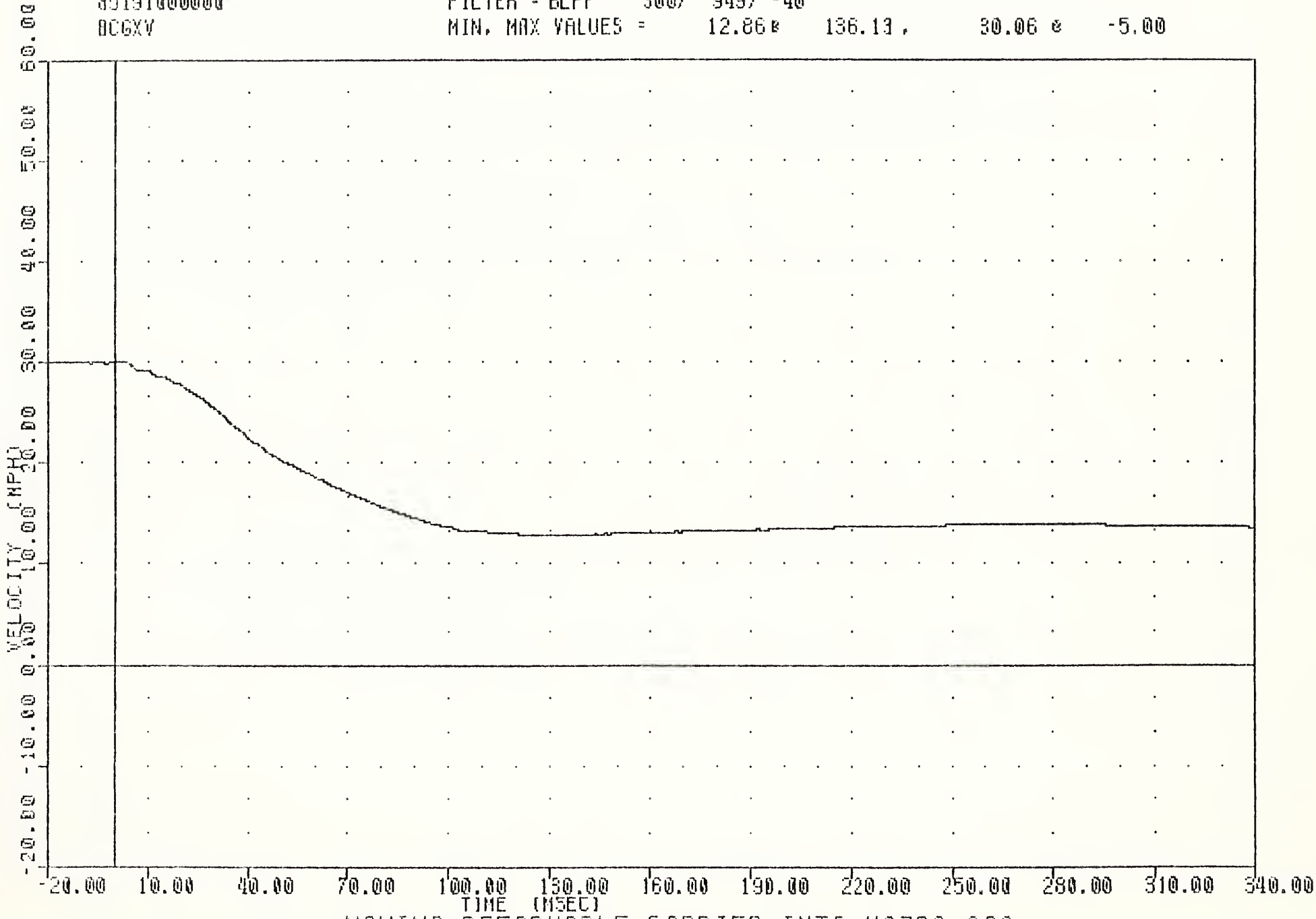
VAT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
851910Q0000 FILTER = BLPF 100/ 316/ -40
BCGZB MIN, MAX VALUES = -4.54 @ 68.25 , 4.92 @ 73.00



MOVING DEFORMABLE BARRIER INTO MAZDA 626
BARRIER CENTER OF GRAVITY Z AXIS

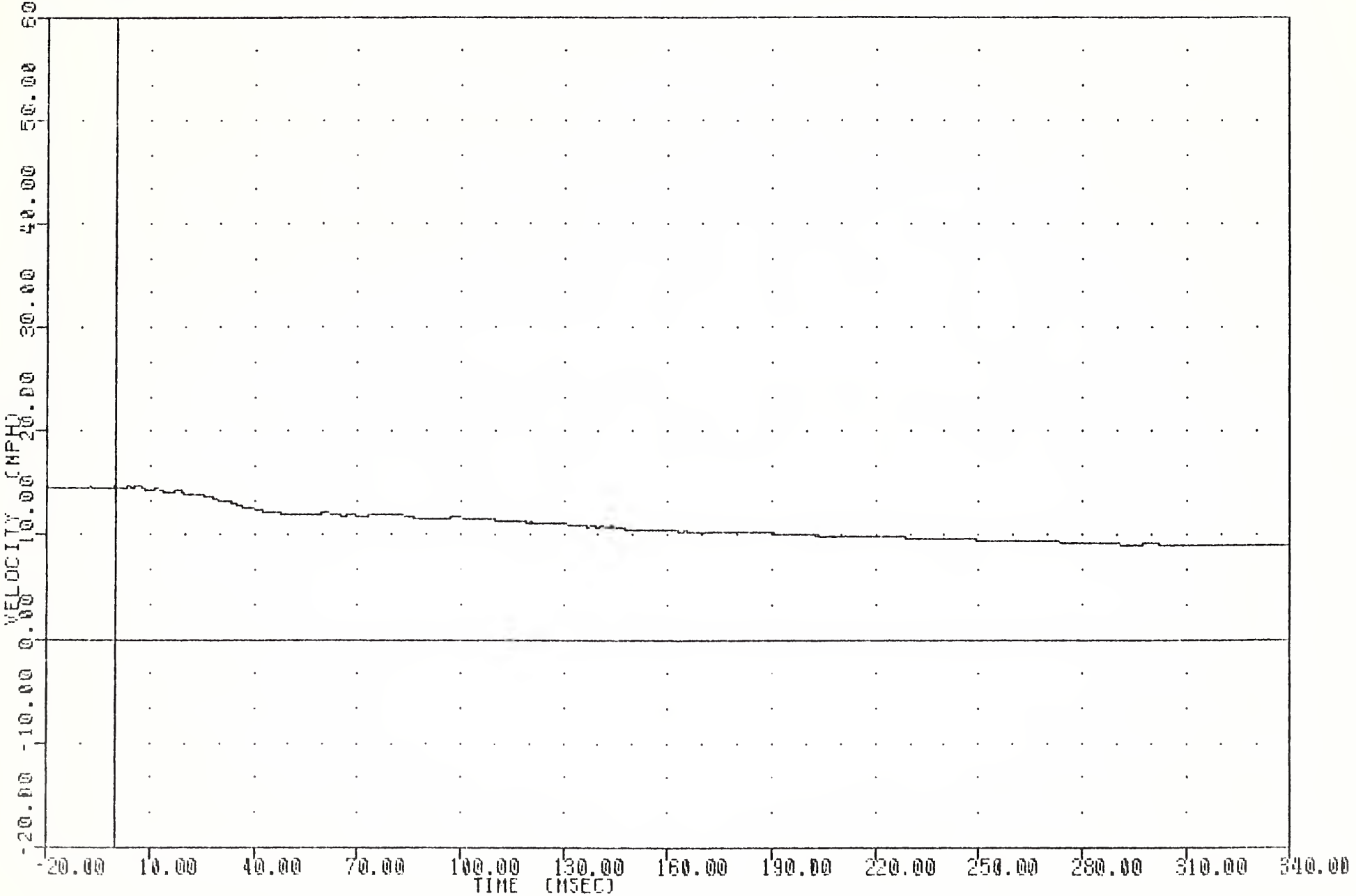

VRT , 850710
SI PROTECTION PROD VEH
851910000000
BCGRG
PLOT DATE 16-JUL-85 12:22:38
FILTER = BL.PF 100/ 316/ -40
MIN, MAX VALUES = 0.09 @ 269.13 , 15.35 @ 36.50
ACCELERATION (G)
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
10.00
40.00
70.00
100.00
130.00
160.00
190.00
220.00
250.00
280.00
310.00
340.00
TIME (MSEC)
MOVING DEFORMABLE BARRIER INTO MAZDA 626
BARRIER CG RESULTANT

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = 6LPF 300/ 949/ -40
BCGXV MIN, MAX VALUES = 12.86 @ 136.13 , 30.06 @ -5.00



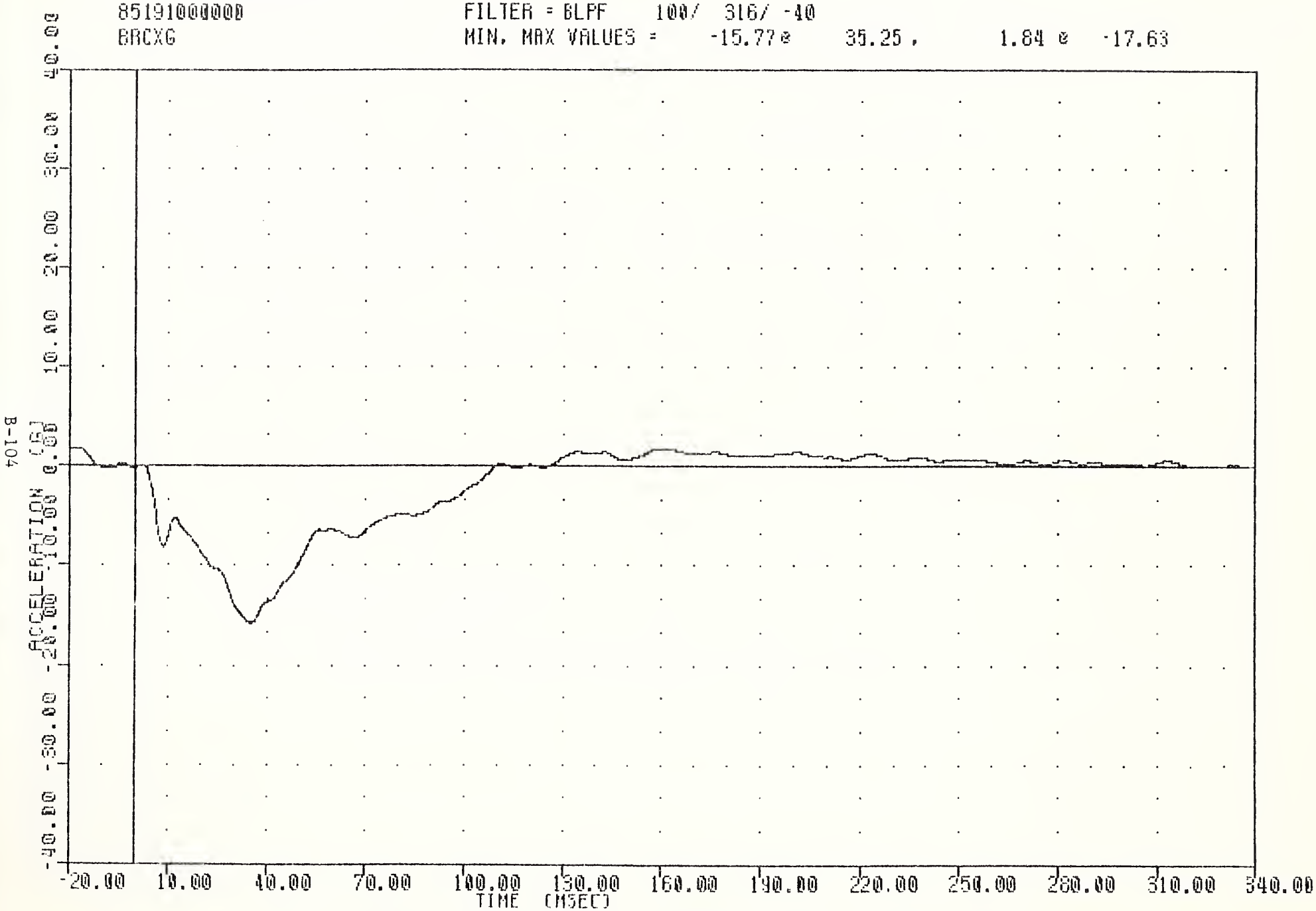
MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING BCGXG

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 300/ 949/ -40
BCGYV MIN, MAX VALUES = 8.93@ 340.00 , 14.72 @ 6.50

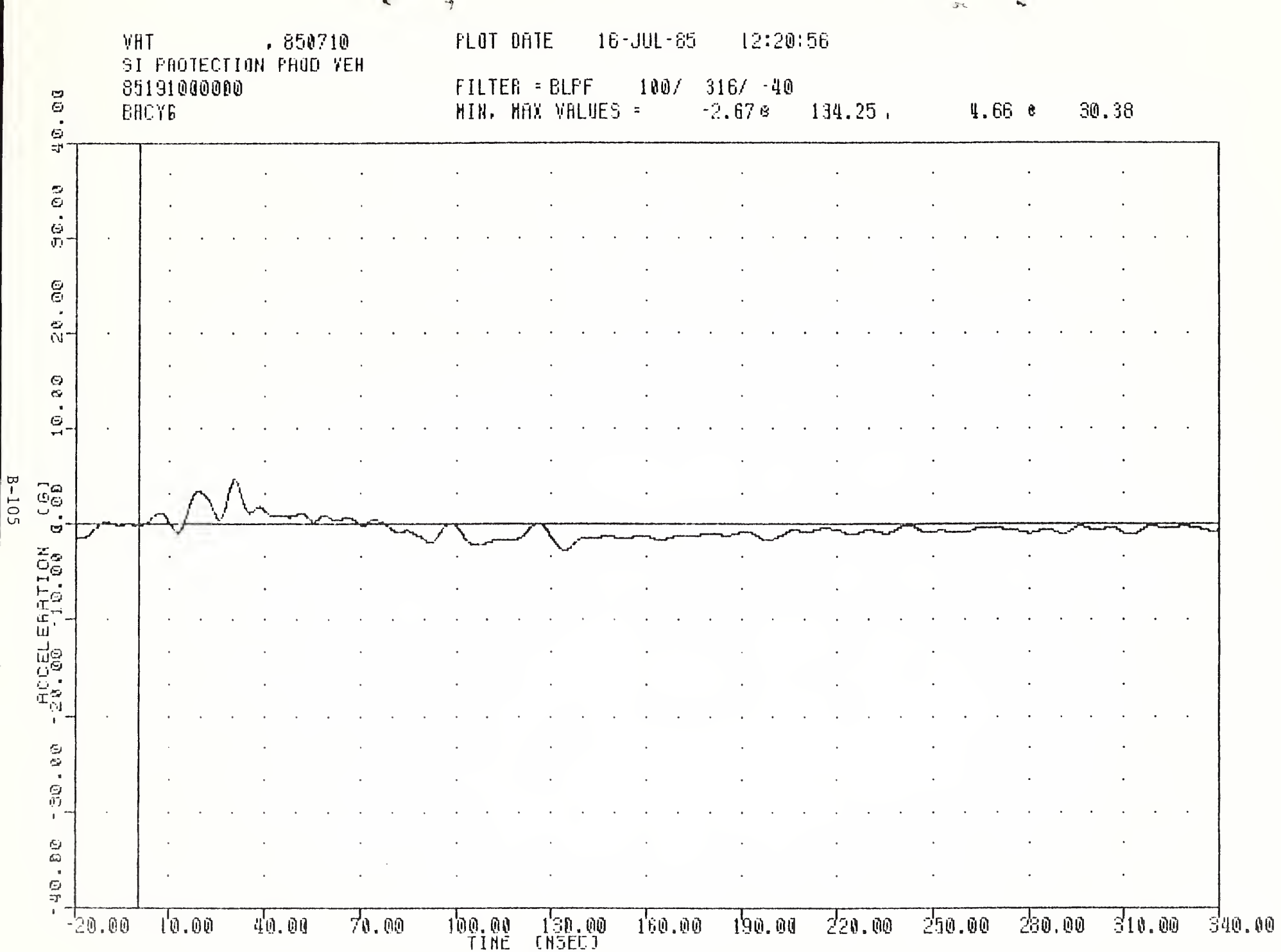


MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING BCGYG

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
85191000000 FILTER = BLPF 100/ 316/ -40
BRCXG MIN, MAX VALUES = -15.77 @ 35.25 , 1.84 @ -17.63

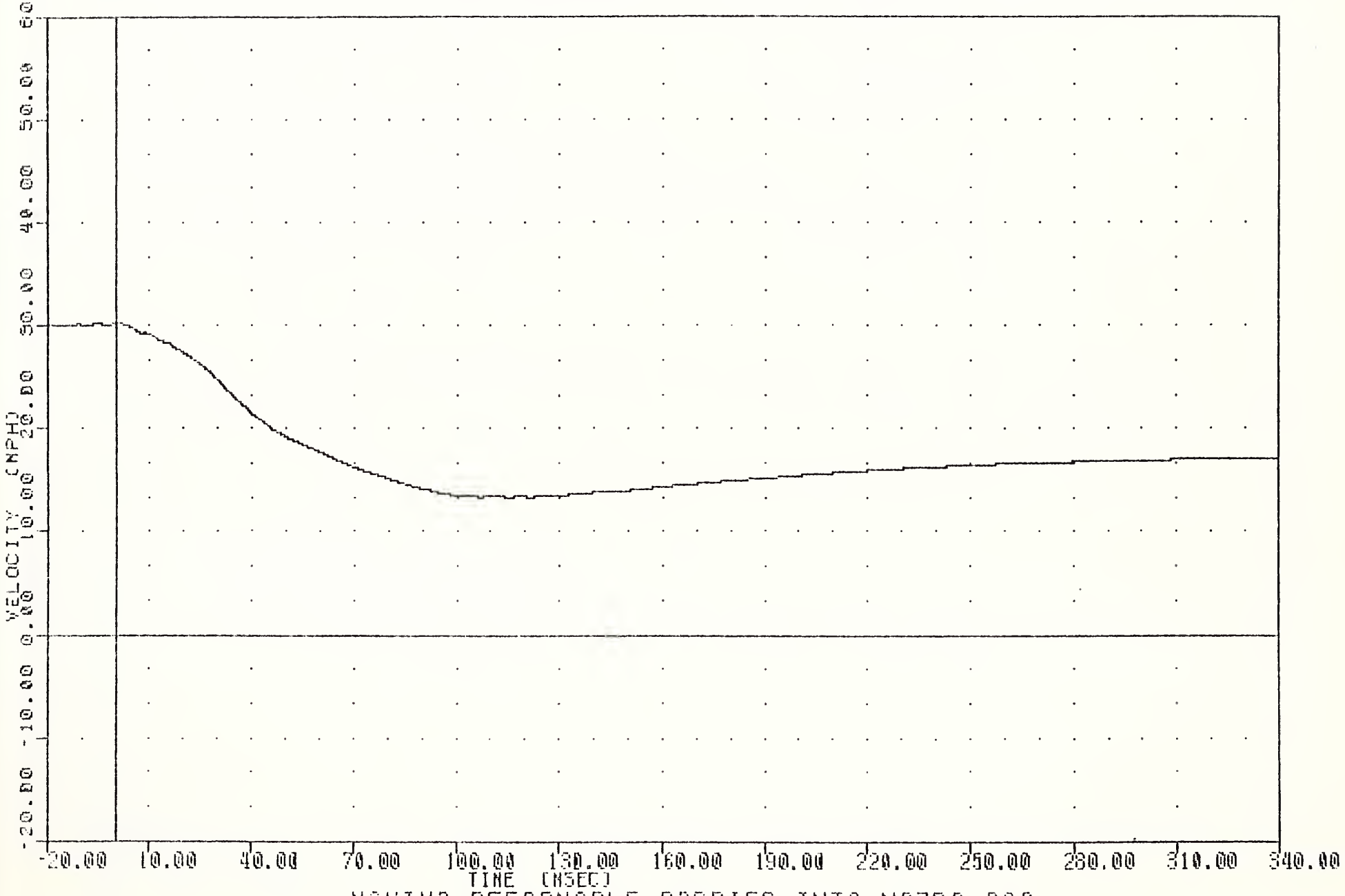


MOVING DEFORMABLE BARRIER INTO MAZDA 626
BARRIER REAR CROSSMEMBER ACCELERATION X AXIS



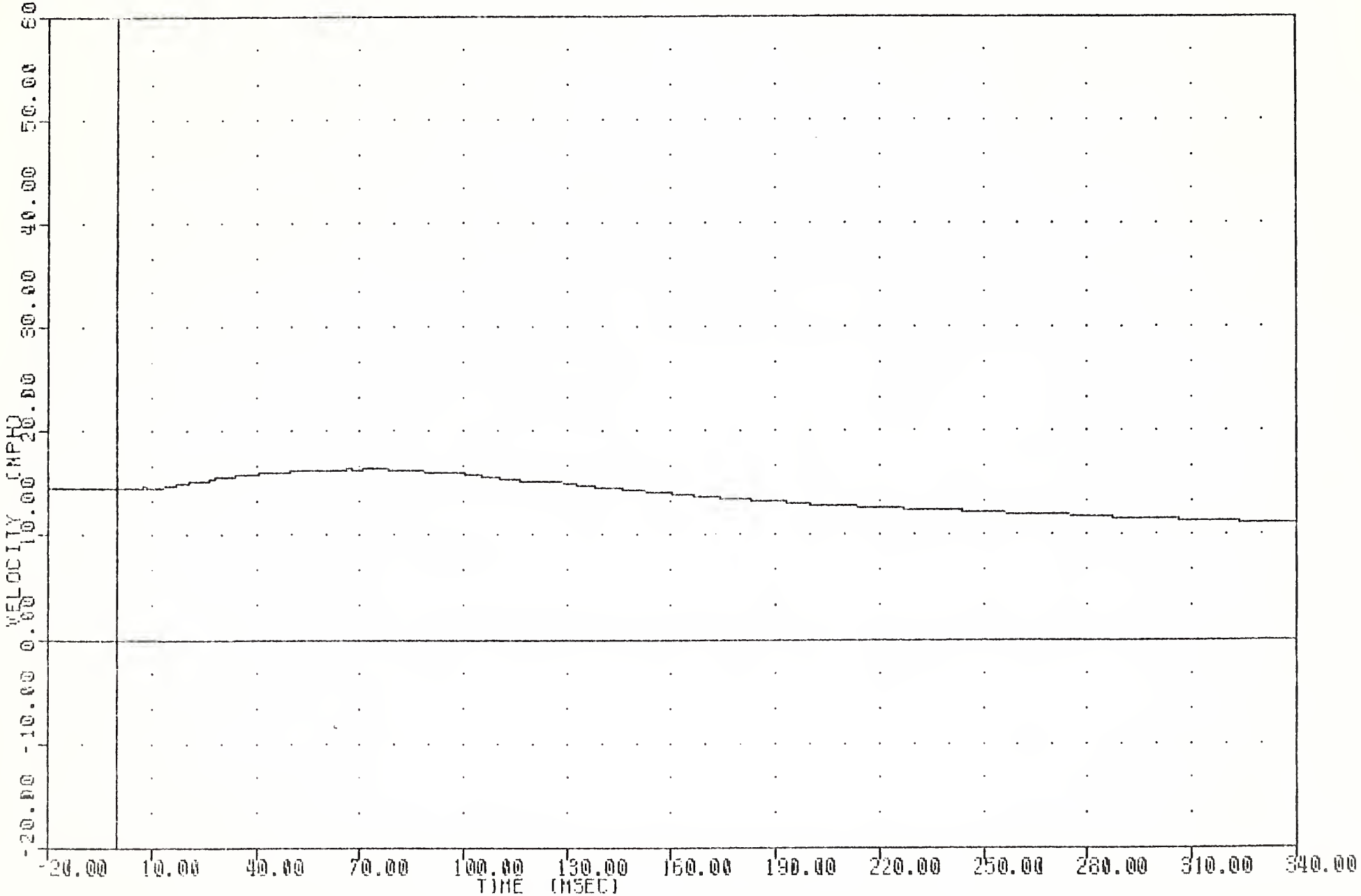
MOVING DEFORMABLE BARRIER INTO MAZDA 626
BARRIER REAR CROSSMEMBER ACCELERATION Y AXIS

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD YEH
851910@@@@@ FILTER = BLPF 300/ 949/ -40
BRCXV MIN, MAX VALUES = 13.36 @ 106.88 , 30.15 @ -5.63



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING BRCXG

VRT , 850710 PLOT DATE 16-JUL-85 12:20:56
SI PROTECTION PROD VEH
851910000000 FILTER = BLPF 300/ 949/ -40
BRCYV MIN, MAX VALUES = 11.08 @ 340.00 , 16.40 @ 72.25



MOVING DEFORMABLE BARRIER INTO MAZDA 626
DELTA V USING BRCYG

APPENDIX C

DUMMY CERTIFICATION

SIDE IMPACT DUMMY CALIBRATION
DUMMY SERIAL NUMBER 123

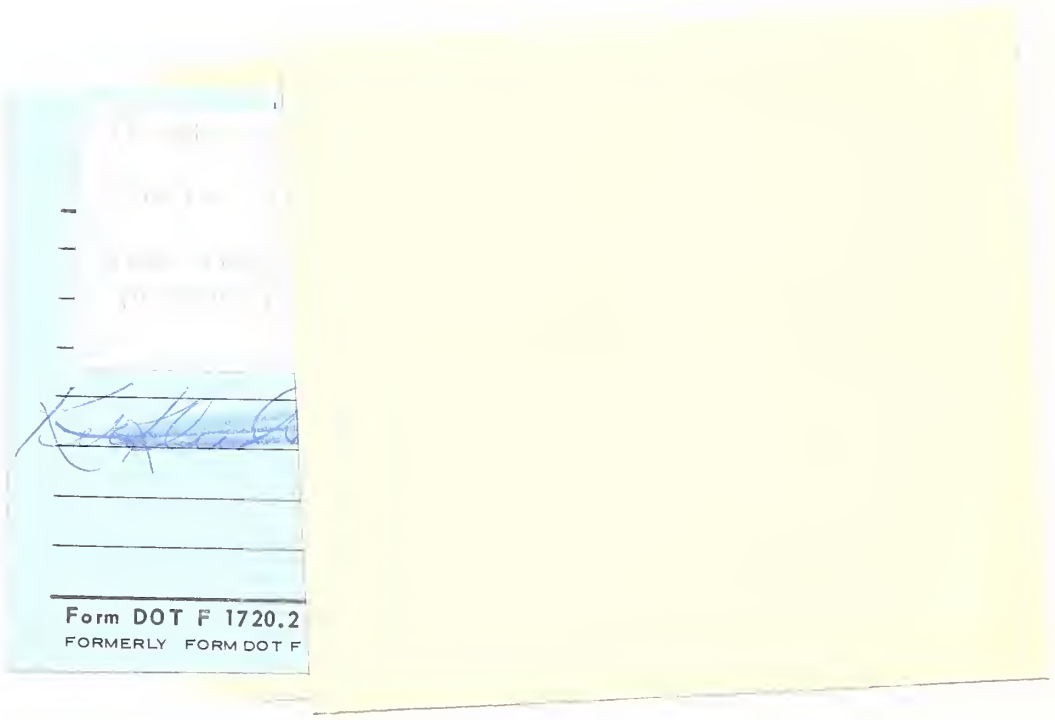
TEST/ DATE	CHANNEL	FILTER CLASS	PEAK ACCELERATION (g) SPECIFICATION	TEST RESULT
HEAD 5/1/85	HEAD Y-AXIS	1000	150-175	154.51
THORAX 5/1/85	LEFT UPPER RIB Y-AXIS			
	PRIMARY	180	36-50	38.18
	REDUNDANT	180	36-50	41.19
	UPPER SPINE Y-AXIS			
	PRIMARY	180	16-24.6	25.33*
	REDUNDANT	180	16-24.6	25.29*
	LOWER SPINE Y-AXIS			
	PRIMARY	180	17.6-26.4	28.30*
	REDUNDANT	180	17.6-26.4	27.68*
PELVIS 5/1/85	PELVIS Y-AXIS	180	50-65	73.36*

*DUMMY DID NOT MEET SPECIFICATION.

SIDE IMPACT DUMMY CALIBRATION
DUMMY SERIAL NUMBER U02

TEST/ DATE	CHANNEL	FILTER CLASS	PEAK ACCELERATION (g) SPECIFICATION	TEST RESULT
HEAD 5/1/85	HEAD Y-AXIS	1000	150-175	171.05
THORAX 5/1/85	LEFT UPPER RIB Y-AXIS			
	PRIMARY	180	36-50	38.47
	REDUNDANT	180	36-50	41.03
	UPPER SPINE Y-AXIS			
	PRIMARY	180	16-24.6	25.00*
	REDUNDANT	180	16-24.6	25.27*
	LOWER SPINE Y-AXIS			
	PRIMARY	180	17.6-26.4	22.16
	REDUNDANT	180	17.6-26.4	22.09
PELVIS 5/1/85	PELVIS Y-AXIS	180	50-65	72.88*

*DUMMY DID NOT MEET SPECIFICATION.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